

AIRFIX magazine

MAY, 1968

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MONTHLY



**IN
THIS
ISSUE**

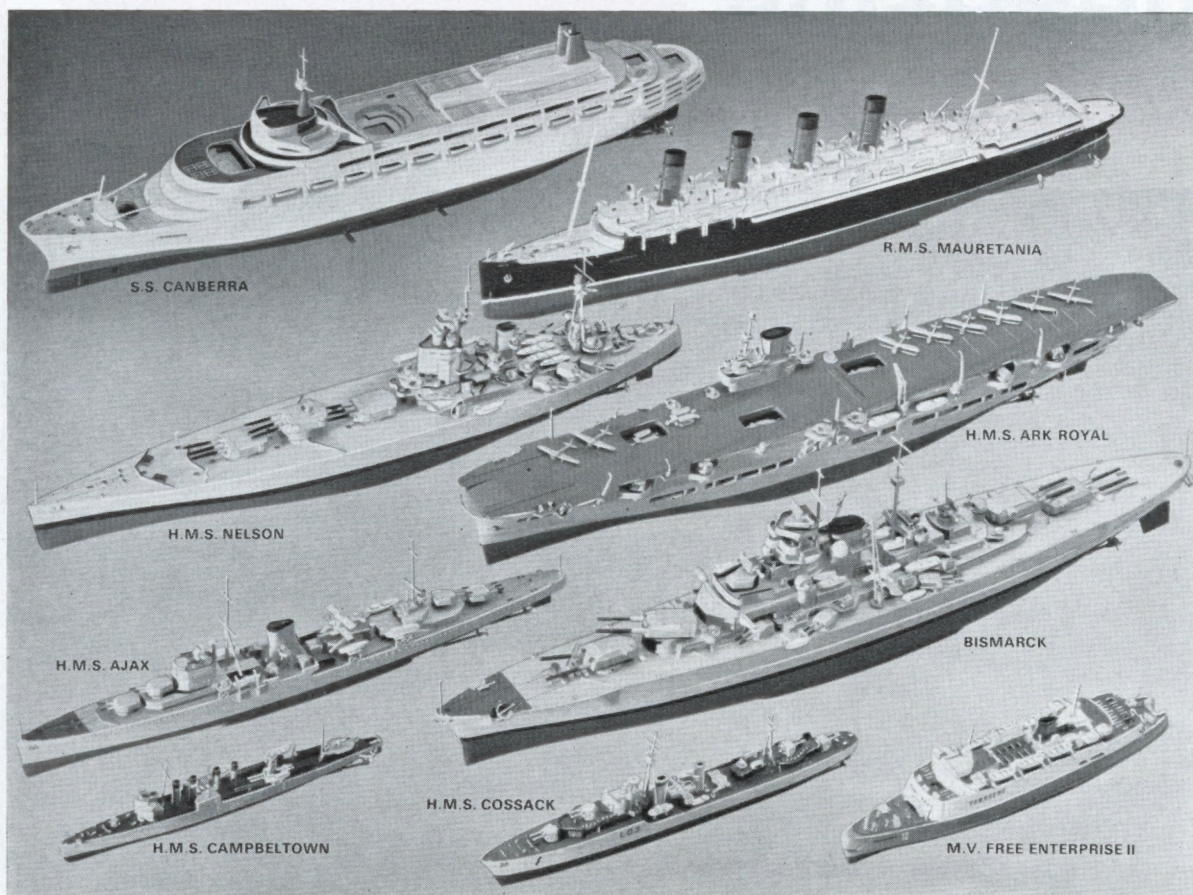
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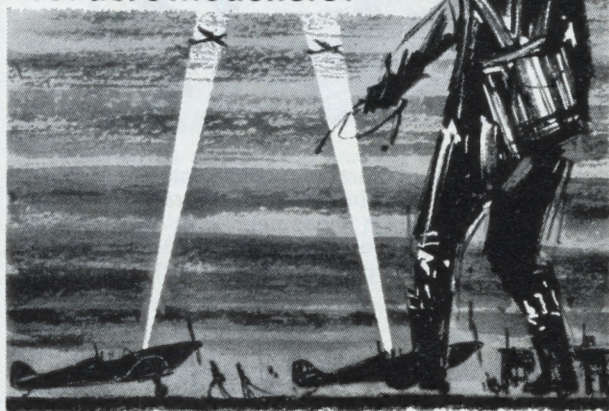


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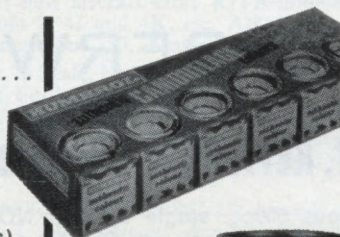
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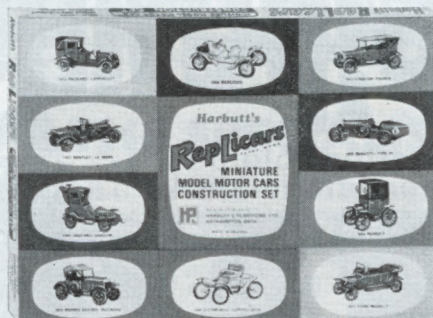
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AIRFIX magazine

AIRFIX FOR PLASTIC MODELLERS

magazine

Volume 9, Number 9

May, 1968

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COVER PICTURE

One of the best looking of the current crop of saloon cars is the latest Vauxhall Victor introduced last October which is available with a 1.6 or 2 litre engine, has a five-bearing crankshaft and belt-driven overhead camshaft, and numerous safety features including anti-burst door locks, collapsible steering and recessed controls. Optional alternator, four headlamps, and fresh air ventilation are other features.

(Illustration courtesy Vauxhall Motors Ltd)

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Editor CHRIS ELLIS

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- Grumman Hellcat
- MR 300 MotoRace Set

AIRFIX have looked back over 42 years of aviation history to the remarkable 1926 Ford 5-AT Tri-motor 'Tin Goose' for their latest civil aircraft kit. First taking to the air in 1926, the 'Tin Goose' is still in scheduled air service in the US as well as on 'bush' routes in South America. Nearly 100 precision moulded polystyrene parts are used in the construction of the big 1:72 scale Airfix model which features passenger cabin details, complex undercarriage and engine details, and even simulates the corrugated metal skin of the aircraft. Price is 7s 11d.

THE Airfix MR 300 International Racing Set—price £12 19s 10d—is the newest and biggest addition to the Airfix range of motor racing sets. The 30-foot two lane circuit with banked track covers an area 10 ft by 5 ft 6 inches and opens up a new high speed dimension in drawing room motor racing. The two cars supplied in this set are the Honda and Eagle Weslake described below.

A wealth of new equipment (also available as separate accessories) is incorporated in the 'International' set and this includes a Banked Curve (21s 8d bought separately)—four sections of banked two-lane track which clip together to form a 180-degree high speed corner that can double the effective length of high speed straights.

The Honda Grand Prix car—Japan's first racing success—



Above: The new Airfix Grumman Hellcat finished as a Fleet Air Arm F6F-5. Foot of page: The beautifully detailed Ford Tri-motor.

and the promising American-designed, British-built Eagle Weslake are the two new 1:32 scale cars for the 'International' (27s 9d each separately). Each is fitted with fully operating Ackermann steering, the new Airfix Hi Speed Can Motor with high revs, high torque, and savage braking power. To cope with the high speed track and extra car performance, Airfix have developed SP 002 Tyres made in a new synthetic rubber that gives long life, improved track adhesion, controlled drifting and a quiet, smooth ride. Both the Hi Speed Can Motor and the SP 002 Tyres are now standard equipment for most of the Airfix ready-to-race cars (newly packaged in clear acetate presentation packs) as well as all the cars in the six motor racing sets.

NEWEST edition of the Airfix Construction Kit Catalogue is now available from Airfix stockists and hobby shops. This includes a supplement illustrating the latest models and releases scheduled for the coming months. The supplement is in full colour, uniform with the rest of the catalogue. Also incorporated in the supplement is a revised price list which includes kits currently available and due for release shortly. Price of the catalogue is 1s 6d.

A model of the famous Grumman Hellcat navy fighter which can be completed as either of two different variants is the latest addition to the Airfix 1:72 scale warplane range. More than 60 beautifully detailed parts are included in this kit, and there are optional cowlings for the F6F-3 or F6F-5 versions. Two sets of transfers are included, one for a machine from USS Yorktown and the other for a 800 Sqn FAA Hellcat from HMS Emperor in the Pacific, 1945. Full panel and rivet detail is featured in the kit, there is a full combat load of bombs, rockets, and drop tanks, and the wings can be assembled in either the flying or folded positions as desired. Price of the Airfix Hellcat kit is 3s 8d.

Due to an increase of purchase tax subsequent to the recent budget, the price of all Airfix kits is slightly increased. These are the new prices: Series 1—2s 7d; Series 2—3s 8d; Series 3—5s 2d; Series 4—7s 11d; Series 5—9s 11d; Series 6—12s 11d; Series 7—15s 9d; Series 8—18s 3d; Series 9—20s 6d.



Half-track conversions

CONVERSION possibilities with the Airfix M3 half-track kit are almost endless. Quite apart from 'official' adaptations of the chassis, there have been numerous local modifications or variants peculiar to one particular user. Examples of both these categories are covered this month.

First, a 'local' variant, in this case the Command Vehicle version used by the British army toward the end of the last war and employed in the same role until quite recently. Thus this model is suitable for any time from 1944 onwards, and an ideal companion vehicle for the Centurion. Basically the Command Vehicle conversion used by the British was fitted with a canvas covered hardtop roof, raised sides, extra wireless sets and map tables internally for staff officers' use, and canvas 'penthouse' extensions for erection when the vehicle was operating in the field. There were numerous detail variations, particularly with regard to external stowage and fittings, and my model is based on a vehicle used by a brigade commander of the 3rd Infantry Division in the 'fifties.

The model is very simple, and the first step is to build up the kit following the instructions to Stage 24. Since the interior is concealed you can omit internal fittings if you like and consign them to your spares box. Instead of an unditching roller, the vehicle carries a drum of telephone cable on the front bumper. To depict this, simply wrap cotton round the roller and fit as in the instructions. I made the hardtop from the tilt top of the Matador, left over from previous conversions. One end is sawn off this to reduce the overall length to 37 mm, and a 2 mm wide slice is taken from the centre-line to reduce the hardtop to half-track width. This is easily done by marking the centre-line and scribing it with a knife point, then measuring 1 mm each side and

Below: The T12 model under construction showing the mounting plate taken from the '88' cruciform (background), the pivot, the shield, and the gun from '88' parts. **Bottom:** The Command Vehicle conversion—note cable reel at rear and side extensions.

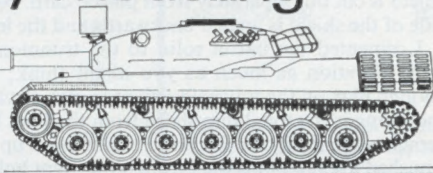


Front view of a T12 clearly shows the stays on the gun shield and the vision slit. This is a US-manned vehicle, the crew being in the World War 1 pattern helmets worn until 1941.

Military Modelling

by

Chris Ellis



scribing further lines. Use these outer lines as cutting guides for your razor saw (the X-Acto type makes short work of this task). Then cement the two outer sections together to give a hardtop the exact width of the half-track body.

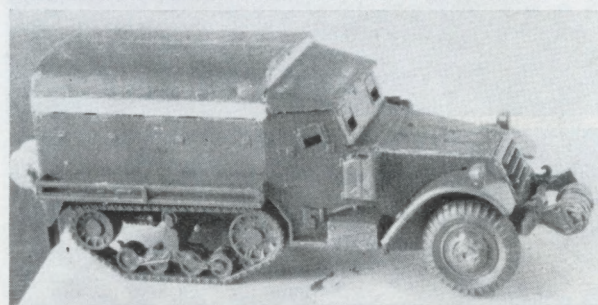
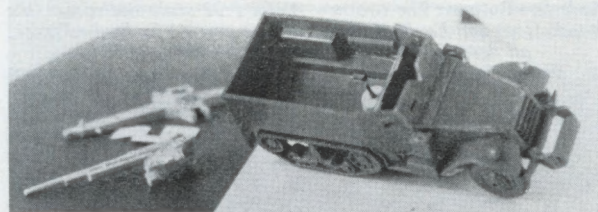
Sides of the vehicle have to be raised with strips of 2 mm deep plastic card to give extra headroom and the top is cemented straight on the side extensions. You then need a further strip of plastic card to fit under the front edge of the hard top, with the corners curved to match the curve of the roof. Then cut the front 10 mm from the canopy (part 39) and cement over the driving cab. Two 1 mm square scraps of plastic card are cemented at the extreme front of the side extensions to depict aerial brackets, and the basic model is then complete.

Further detailing is up to you. A typical fitting would be a telephone cable drum on the rear to one side of the door, or even one each side. I used scrap discs to fashion one of these. The canvas 'penthouse' screens were rolled up along each side at the base of the hardtop and also above the rear door. When the vehicle was used for directing operations, these would be unrolled and fitted over stanchions (normally carried in the side stowage racks). I used rolled tissue paper to represent the side curtains and pins—with heads and tips snipped off—as the stanchions in the racks. For a diorama scene you could actually rig the extensions—they looked just like half a ridge tent each side—with miniature folding chairs and tables inside. Final additions are aerials on the brackets from stretched sprue or wire.

Most important of the self-propelled gun versions of the half-track was the T12 SP 75 mm which carried the old French '75' of World War 1 fame (surplus in 1941, having been replaced in US Army artillery regiments) mounted in the back of a M3. This was used by both the British and Americans in the last stages of the North Africa war, and again in the Italian campaign where some British tank regiments included a troop of T12s in their HQ Sqn to give support fire to the tanks. It was also used in the Pacific, so it's an important model for wargamers as well.

The T12 model once again follows the kit instructions up to Stage 24, except that the fuel tanks are cemented 4 mm from the

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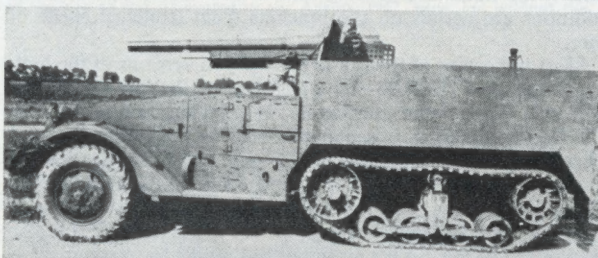
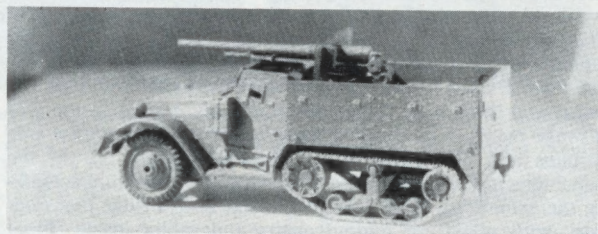
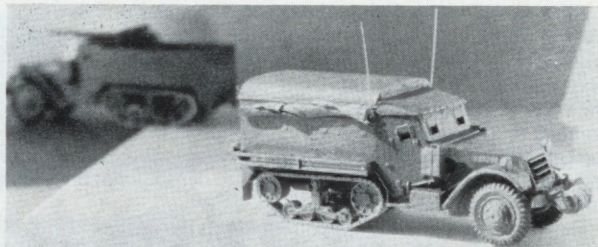


Military Modelling — continued

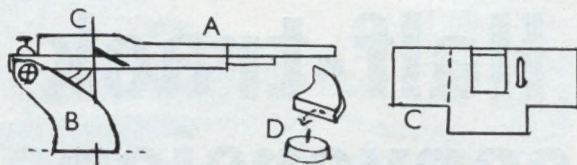
rear end of the interior instead of in the usual location. The seats (20 and 21) are omitted, and the bulkhead (part 12) is sawn off short across the top of the seat squabs. The side stowage racks are omitted also. Finally a V-shaped segment is cut from the top of the front armoured screen (part 26), 3 mm deep and 4 mm wide at the top. This acts as a rest for the gun barrel in the travelling position.

Details of the gun are most easily seen by studying the sketch and the pictures. I used parts from a Flak 88 left over from German half-track conversions, though other bits and pieces would suffice. I'd be the last to claim 100 per cent accuracy for the gun, but I've concentrated on overall appearance (which is right) and is the most important point about modelling in 1:76 scale. The gun mount is largely concealed, in any case, by the sides of the vehicle. The barrel, cradle, and trunnions are cemented together after trimming to match the drawing and a gun shield is cut out separately from plastic card. Note that the right side of the shield is angled backwards and the left side isn't.

I cemented the barrel solid to the trunnions, which doesn't limit elevation as much as you might think; there is, in fact, enough play on the traversing pivot to give elevation as well. The mounting is the top 3 mm sliced from the Flak 88 cruciform and cemented centrally on the vehicle floor close up to the bulkhead. I pushed a scrap of plastic through the pivot hole (a machine gun barrel actually) before cementing the mounting in place and this forms the traversing pivot for the gun. Final additions are the stays from the gun shield to the cradle, made from scrap of heat-stretched sprue, and clearly shown in the heading picture.



Above, top to bottom: Completed model of the Command Vehicle with rolled up 'penthouse' sides and aerials. Completed T12 model. Note the stowage box, from plastic scrap, on rear of left gun shield. Full-size T12; this has cab side plates folded.

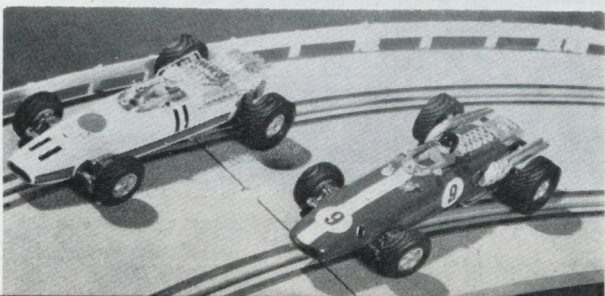
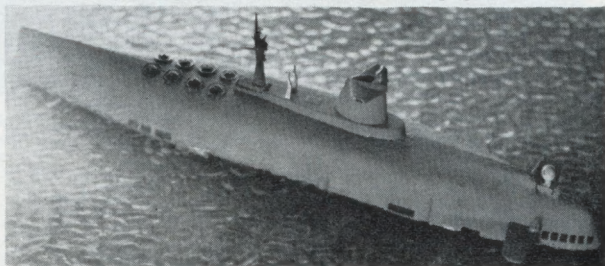


Above: Full-size drawings for T12 model. A—barrel filed down from '88'; B—trunnions from '88' kit; C—gun shield, bend back at dotted line; D—suggested method of pivoting gun mounting plate.

ANTHONY BROWN (13), of Southsea, a keen Airfix modeller, whose father is Chief Staff Officer to Flag Officer Aircraft Carriers, was none too happy with the Ministry of Defence decision to scrap HMS *Victorious*. He offered his own light-hearted idea for giving the ship a new lease of life. Here it is in his own words:

'Finding one old model of the *Victorious* in a waste-paper basket at school, I decided to turn the hull (the only part which was not broken) into that of a submarine. I took off the flight deck and superstructure, and cut off the top of the hull above the stern openings, smoothing down any rough edges with a soldering iron. Then I turned what remained of the hull upside down and back to front. On to the forward part of the flat deck (or what used to be the bottom of the *Victorious*) I stuck the funnel of the Airfix model of the *France* and the superstructure that it fixes on to for a conning tower, and to the after part of this superstructure I stuck the *France's* mast. I removed the tail planes from an Airfix model of a Seahawk and stuck them on to the sides of the submarine at the front for hydroplanes. Next I stuck eight of the wheels from an Airfix Panther tank behind the mast for the outer covers of the Polaris missile tubes. I stuck a couple of aerials between the conning tower and the mast, and painted them silver. Finally I stuck some Sellotape on the inside of all the windows to look as if there was glass in them. I painted the whole of the completed 'submarine' matt grey, except for the Polaris covers which I painted black. Of course the submarine is not in scale with other Airfix model ships, but I am in the process of converting the *France* into a Submarine Depot Ship, since it is big enough to stop the submarine looking the size of an aircraft carrier. If the Royal Navy are thinking of ways to get rid of the real HMS *Victorious*, perhaps they could follow suit!'

Below: Reader Anthony Brown's tongue-in-cheek solution to utilising HMS *Victorious* in the Polaris missile age as described in his letter. **Bottom:** The two new Airfix 1:32 scale slot racers, the Honda (top) and Eagle-Weslake, on the new Airfix banked track, all described in 'News from Airfix' on page 334.



HANDLEY Page's flight trials with its new Jetstream business airliner in Southern France are going so smoothly that there is every hope of completing all tests for a special category Certificate of Airworthiness before the aircraft returns to England in a few weeks' time.

Trials were transferred from Radlett to Pau near the Pyrenees last December in order that the flying programme could benefit from the better climate there. A tribute to the Jetstream's reliability is the high rate of flying achieved by the first prototype in France. Averaging nearly two sorties a day Jetstream G-ATXH has exceeded its predicted schedule of test flying by more



Top: The Jetstream prototype G-ATXH, high over the Pyrenees on one of its many test flights from Pau. John Allam, Chief Test Pilot for Handley Page is at the controls. **Above:** New fin for Nimrod. The Hawker Siddeley replacement for the Shackleton has recently acquired a new triangular fillet to the leading edge of the fin.



than fifty per cent.

Basic performance, stability, controllability, engine handling, flutter and systems-engineering tests are all being undertaken by this aircraft. Measurements so far confirm the Jetstream's estimated performance figures. A large proportion of the engineering tests have now been completed.

Each aircraft is brim full with as much test equipment—auto-observer, trace recorders and cameras—as that carried by each Handley Page Victor four-jet V bomber during its trials. On Jetstream test flights, seventy-five parameters are being continuously recorded with a further one-hundred-and-sixty multi-

plexed samplings or visual readings. Altogether the first two flying prototypes have a capability of recording up to six-hundred parameters each.

Three Handley Page pilots are currently sharing the bulk of test flying. They are: John Allam, Chief Test Pilot; Grahame Moreau, Jetstream Project Pilot, and Britain's aerobatic champion Neil Williams. The latter joined the test programme last year after completing his service as a test pilot at RAE Farnborough.

Supporting this programme at Pau is a forty strong team made up of flight test, ground test and systems engineers, aerodynamicists, stressmen (for flutter tests), draughtsmen, ground crew, product-support and administration personnel. For offices, they have taken over a new extension to Pau Airport's terminal building. All processing and calibration equipment was shipped there from Handley Page's design centre. To link Radlett and Pau, the company operates a twice-weekly airline service for personnel and cargo. Its introduction recalls that nearly forty-nine years ago Handley Page pioneered Britain's first overseas air services.

Pau is also the main flying base for Turboméca, manufacturer of the Jetstream's Astazou prop-jets. The high degree of engineering compatibility achieved between engine and airframe is in no small measure due to the excellent collaboration received from Turboméca. In service, the Jetstream's Astazou engines will be backed by the comprehensive world-wide facilities of the Rolls Royce/Bristol Siddeley organisation.

The third Jetstream G-ATXI made its maiden flight on March 8 from Radlett. Earlier it had been used for the four-week resonance test section of the aircraft's ground development programme which included static loading and pressurisation tests at present being conducted on a fourth prototype.

This aircraft will join the other two, flying at Pau in order to complete as soon as possible the five-hundred hours necessary for the type Certificate of Airworthiness. In addition, Jetstreams will be airborne for a further thousand hours' intensive flying as part of the aircraft's flight development programme.

So far, 165 Jetstreams worth £26½m have been ordered for civil operations in Europe, the Americas, Africa and elsewhere. An order for eleven military Jetstreams has been placed by the USAF which has also taken options on very many more.

A CHANGE OF FIN

IN a recently released photograph of the Hawker Siddeley Nimrod four-jet maritime reconnaissance aircraft, it can be seen that the fin and rudder shape of the aircraft has been changed. An exceptionally large fillet has been added to the leading edge of the fin, presumably to improve stability.

Powered by four Rolls Royce Spey engines, flight development trials on the first two prototype aircraft are now well advanced. The Nimrod will enter service with the Royal Air

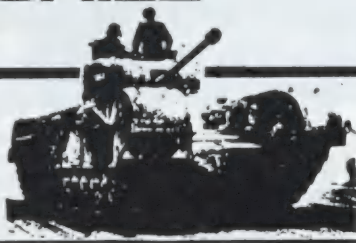
continued on page 339



Top: Shape of things to come. The DC-10 tri-jet 300-seat transport which has a rear engine mounted on top of the fuselage under the fin and rudder. **Above:** A capacious fuselage giving ample passenger room is one of the main features of the DC-10

THE CHURCHILL TANK

by
Peter
Chamberlain



PART 11

POST-WAR MODELS

By the middle of 1942, work had commenced on the modification of the early models of the Churchill. Not only were Churchills returned from the field for what was virtual rebuilding, but the armour thickness of some models were stiffened up by the addition of appliqué armour. Much of this work was done by the firms of Vauxhall and Broom & Wade, where these early models were converted at the rate of 15 per week.

By January, 1943, production of the Churchill had reached 160 new vehicles and 100 modified models. With the introduction of the Mk VII in 1943, work was started to convert Mk III, IV, V, VI, to Mk VII status. Most of this conversion work was carried out by the REME workshops. Retrospective fittings included later model 6 pdr guns or 75 mm guns, Mk VII type cupolas and sights, and, of course, the added armour. New mark numbers were allotted as follows:

Churchill Mk IX: Mk III and IV with heavier composite turret, reinforced roof, and re-armoured with appliqué side armour, thicker front plates, and the addition of skirting plates to the hull. Ordnance QF 6 pounder Mk 3 or 5 was fitted.

Churchill Mk IX LT: As for Mk IX, but retaining the original turret unaltered. 'LT' stands for 'Light Turret'.

Churchill Mk X: Mk VI reworked with heavier composite turret, reinforced roof, and re-armoured with appliqué side armour. New visor and glacis plate, heavy suspension units and H41 gearbox were other changes. Ordnance QF 75 mm gun Mk 5 or 5a was fitted in this mark.

Churchill Mk X LT: As for Mk X, but retaining original turret.

Churchill Mk XI: Mk V reworked incorporating a heavier



Churchill VIIIs of the Jordanian Army on exercises in the early 'fifties.



Top: Third of the Black Prince prototypes showing the wider hull and generally similar layout to the Churchill VII. Above: Churchill VII AVRE towing an AVRE sledge on exercises on Salisbury Plain (Imperial War Museum photos).

composite turret, appliqué side armour, thicker front plates, reinforced roof and the addition of skirting plates to the hull. Ordnance QF 95 mm Tank Howitzer Mk I remained the main armament on this model.

Churchill XI LT: As for Mk XI, but retaining original turret.

To enable the heavy turret on the Mk IX, X, XI, to be traversed, a special turret traversing gear was fitted to replace the original type.

The Black Prince

It has already been recounted how the Churchill armament was increased in size to match operational requirements as the war progressed. The original 2 pdr gave way to the 6 pdr and this in turn gave way to the 75 mm gun in the Mk VII. These changes were incorporated in an attempt to match the ever increasing calibre of gun being mounted in German tanks, though when the Churchill was designed guns of a calibre larger than 2 pdr were hardly envisaged in British tanks. The appearance of the Tiger and late model Pz IVs with 75 mm and 88 mm guns led to British activity to mount guns of comparable hitting power in existing designs suitably adapted (the Sherman Firefly and Challenger with 17 pdrs being prime examples), and to initiate new designs round the 17 pdr.

Towards the end of 1943, Vauxhall were asked to make plans for mounting the 17 pdr in the Churchill. Elsewhere design work was initiated on the A41, destined to become the Centurion, built from the start with a 17 pdr gun. However, work on the 17 pdr-armed version of the Churchill was continued as an interim design and as a safeguard against failure of the A41. The Churchill was, however, too narrow in the hull to accommodate a turret ring of the size necessary to take a 17 pdr turret so a massive redesign was necessary, based as closely as possible on the Churchill VII (A22F). The new design was designated A43 Black Prince (also known as the Super Churchill).

Six prototypes were constructed by Vauxhall, their completion co-inciding almost exactly with the first six Centurions. The Black Prince was similar in appearance to the Churchill VII but had a wider hull to take the larger diameter turret. Layout was almost identical to the Churchill but a stronger suspension was fitted to support the heavier weight, and track width was increased to 24 inches. The Bedford Twin-Six engine and Merritt-Brown transmission were retained. Cupola was of the all-round type as fitted in the Churchill VII.

The Black Prince weighed 50 tons, had a crew of 5, 6 inch

armour on the turret front, 5½ inches on the nose, 6 inches on the hull front and 3½ inches on hull and turret sides. The 17 pdr was the QF Mk 4. The greatly increased weight with no increase in engine power reduced maximum road speed to only 10½ mph, with a much lower cross-country speed. Cessation of hostilities in Europe in May, 1945, led to all work on the Black Prince being terminated, though trials were carried out on the six prototype models. Subsequently the A41 Centurion became the standard British tank of post-war years and the Black Prince remains only as the ultimate development of the slow, heavily armoured infantry tank idea, a conception that was already virtually obsolete when the original Churchill was designed.

Post War

Churchills remained in service for some years post-war, some Mk VIIs and Crocodiles seeing service in the Korean war. By the early fifties the Centurion had supplanted the last Churchill gun tanks in first line service, but special purpose variants and AVRES remained in service until replaced by Centurion derivatives in 1965. Churchills were also used post-war by the Indian and Jordanian armies and a small number are still used by the Irish Army, probably the only Churchill gun tanks now in operational use.

Retrospectively a service life of a quarter of a century seems unbelievable for a design so outdated in conception even when it was first produced, but the Churchill's great contribution to British AFV history was a special purpose vehicle, the box-like shape and slow speed which limited its value as a fighting tank proving perfectly adaptable for almost every kind of device and duty which the boffins could devise.

This history of the Churchill ends with a summary of the various model designations and projects:

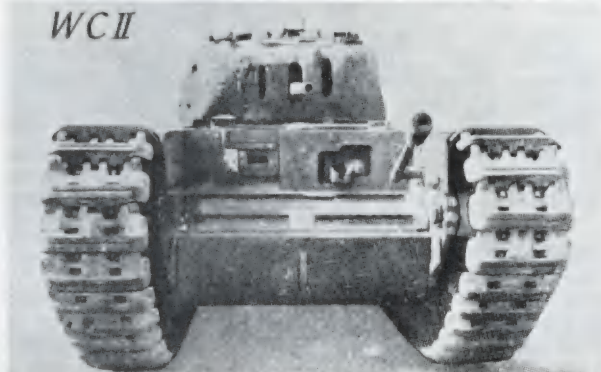
A20EI, A20E2: 1939 Infantry Tank (35 tons). Project by Chief Superintendent of Design, Woolwich, and Harland and Wolff. Two pilot models built but not completed (chassis only). Designed for breaching the Siegfried Line.

A21EI: Project of the A20 which did not proceed beyond the schematic drawing.

A22EI: 1940 pilot model of Infantry Tank Mk IV (Churchill). Development of the A20 by Vauxhall Motors under the direction of the Department of Tank Design. Marks I to VI, some of these were later modified.

A22F: Improved version of the Churchill, this was the Mk V and VIII. Fitted with thicker armour, welded hull, wider tracks and 75 mm gun or 95 mm howitzer.

A23EI: Shortened version of the Churchill proposed by



The Churchill Oke, first of the Churchill flamethrower tanks, which was described in parts 2 and 3 of this series. Note the flame-projector in a pipe passed through the left sponson. This is a Mk II captured at Dieppe and examined by the Germans.

May, 1968



Two views of a Churchill X still used by the Irish Army. Note the appliqué armour on the sides and nose, the heavy reinforced turret and the cupola. Formerly a Mk VI this is typical of reworked vehicle (Photos by Hilary Doyle).

Vauxhall in January, 1941, as a heavy cruiser tank, nor proceeded with. Maximum weight was to have been 24 tons, crew 5, speed 24 mph, and armed with a 6 pdr gun.

A26EI: Projected lighter and faster version of the A22 to fulfil requirement for heavy cruiser tank. Proposed by Vauxhall Motors, 1940-41. Maximum weight to be 24 tons, crew 5, speed 24 mph, and armed with 6 pdr gun. 65 mm armour on hull front, 75 mm armour on turret front.

A42: This designation was subsequently applied to the Churchill Mk VII (A22F).

A43: Infantry Tank Black Prince. Super Churchill mounting a 17 pdr gun. Six prototypes built by Vauxhall Motors by 1945.

In the Air — from page 337

Force by mid-1969 and one of the prototypes should be appearing at the RAF's Golden Jubilee celebrations.

DC-10 ANNOUNCED

PHOTOGRAPHS have recently been released of the new McDonnell Douglas DC-10 Tri-Jet which has two podded engines under the wings and a centrally mounted jet on the top rear fuselage which sprouts the vertical tail surfaces.

The new aircraft is designed to operate from either short runway airports like La Guardia in New York or from larger terminals such as the International Airport at Los Angeles. The DC-10's three high by-pass engines will give the new transport a cruising speed of 600 mph over routes up to 3,000 statute miles.

Designed to carry more than 300 passengers in an all-economy configuration and 252 passengers in a mixed class design the DC-10 is 179 feet 8 inches long and has a wing span of 155 feet 4 inches.

Two abreast seating throughout the first class configuration of the DC-10 can be arranged so that no passenger will be more than one seat away from an aisle. Cabin width of more than 19 feet is 7 feet greater than that of jet liners now flying. New standards of luxury and comfort will be introduced in the aircraft. A major innovation will be a centralised food preparation centre on a deck below the cabin floor level.

Although the McDonnell-Douglas Company do not use the word 'airbus' in their publicity literature it is quite obvious that this aircraft would be a serious challenge to anything produced by a European consortium.

DH4 variants

Drawn and described by Paul Leaman

FOLLOWING on from last month, the three aircraft drawn are of an earlier type of DH4 than that of the kit and have different engine installations. They are not suitable conversions for an absolute novice but should present little problem to a more experienced modeller. In all of these the fuselage is the subject of considerable reworking, and all are different.

The first, A7535, belonged to 25 Sqn, RFC, and was part of its original complement of DH4s. 25 Sqn claims that its aircraft were the first in the British service to carry distinctive squadron markings. These being black panels painted on its FE2s. The similarity between these and the markings originally carried on its DH4s is easily seen. This machine was at some time flown by Lt A. McCudden, younger brother of the more famous Major J. T. B. McCudden, VC; probably by his time the machine had been painted khaki green and carried the crescent marking of later years. To modify the kit to represent this aircraft the fuselage rear of the gunner's cockpit must be rebuilt. Firstly, cut the gun mounting ring off and then take the top of the fuselage down to the level of the embossed line above the simulated lacing. An alternative top can then be made either in thin moulded styrene sheet or bent from stiff thin card or paper. Study the fuselage sections at A-A, B-B, and C-C on the drawing before doing this. It will be appreciated that the fuselage top is easiest made in three pieces. Note also the ribbing between A-A and B-B. This may be represented by short sections of stretched styrene sprue cemented in the appropriate place and then coated with clear varnish before finally painting. The walls of the gunner's cockpit must be reduced to the same embossed line. These modifications being completed, the fuselage may be assembled and the nose modified. This alteration involves the manufacture of the curved exhaust pipes, the rear section of these being made from styrene card and cemented to the existing pipes which have been shortened to take them. The five louvres immediately above the exhausts on either side of the fuselage must be removed. This early Rolls-Royce engine was flown with exposed cylinder heads. Some details of these are shown on the accompanying drawings, more may be found by studying photographs of the type.

The second aircraft, N5978, has the same engine installation as above. Built by Westland Aircraft Works whose trade mark it carries conspicuously on its rear fuselage, it served with 5 Naval Wing. Its rear fuselage differs considerably from the kit and from the previous aircraft. That of the kit must again be reduced to the embossed line above the lacing, and similarly the gunner's cockpit must be taken down to that level. A ring of paper or thin styrene card is then made. This should be of the same outside diameter as the kit fuselage width at the gunner's cockpit and $\frac{1}{8}$ inch long finished length. It is fitted into the enlarged cockpit and cemented into place. A top section for the fuselage is moulded or bent as previously and it will be seen that the sections are different again and that this top can be made in one piece. Ribs, now running the full length of the top, are added as before. The area around the gunner's cockpit is built up with body putty to blend in with the fuselage

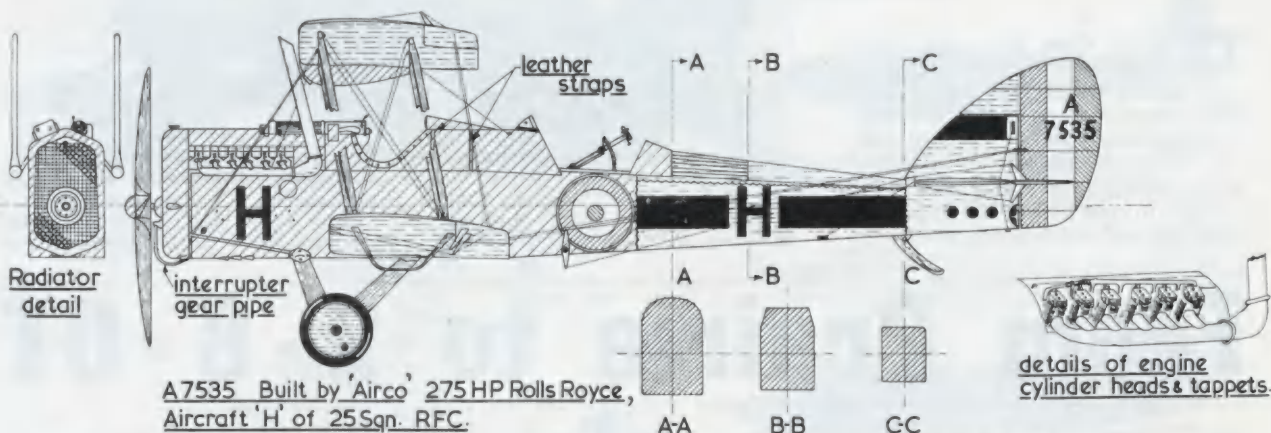
section and after drying out is smoothed to the correct shape. This was plywood on the actual aircraft and as such was not ribbed. A new Scarff mounting is built up and added to the top of the raised cockpit. Modification to the engine installation follows exactly on that described previously.

This aeroplane, belonging to a naval wing, was typically resplendent in its immaculate appearance. All of the metal panels were highly polished and these are best represented by the use of either gloss Metalskin or kitchen foil. The access doors on the fuselage nose were a different shape to those in the basic kit and are best represented by small sections of Metalskin cut to shape. The undersurfaces of this machine's wings appear to be of a higher gloss varnish than was normal but otherwise conformed with the standard. The Westland trade mark, which is shown enlarged in the drawing, was painted in white against the khaki green background as were the small '5', the flight markings 'B3' and the small serial at the rear of the fuselage. It is thought that this aeroplane, of the same flight as B1 described last month, had a red fin only.

The last aircraft illustrated, *Miss Greencap*, was flown by Sqn Ldr A. H. Curtis whilst serving as a lieutenant with 49 Sqn RFC. This had the same square rear fuselage section as the basic kit but a rather different engine installation, the RAF 3A, (RAF in this instance being the initials of the, then, Royal Aircraft Factory which is now Royal Aircraft Establishment, Farnborough.) The engine installation varied considerably and gave a different section to the fuselage forward of the pilot's cockpit. It is, just, possible to carve the existing fuselage to this section but only with care. It will be seen that the side engine louvres will remain whilst those above and below the nose are removed, together with the access doors on the fuselage sides. The holes provided for the exhaust pipes are filled in as necessary. The greatest variation from the kit is the radiator shape and the higher thrust line of the engine. The radiator is best fabricated from a $\frac{1}{8}$ inch wide strip of 30 thou styrene card. This is warmed and formed to the radiator's correct frontal shape as shown in the drawing. The ends are trimmed to length and a cement join made. When this has hardened the front edge can be filed to a rounded section. A second piece of styrene card is cut to fit loosely inside this rim, but before being cemented in place must be covered with thin gauze to represent the radiator honeycomb. A small piece of coarse nylon stocking will do for this.

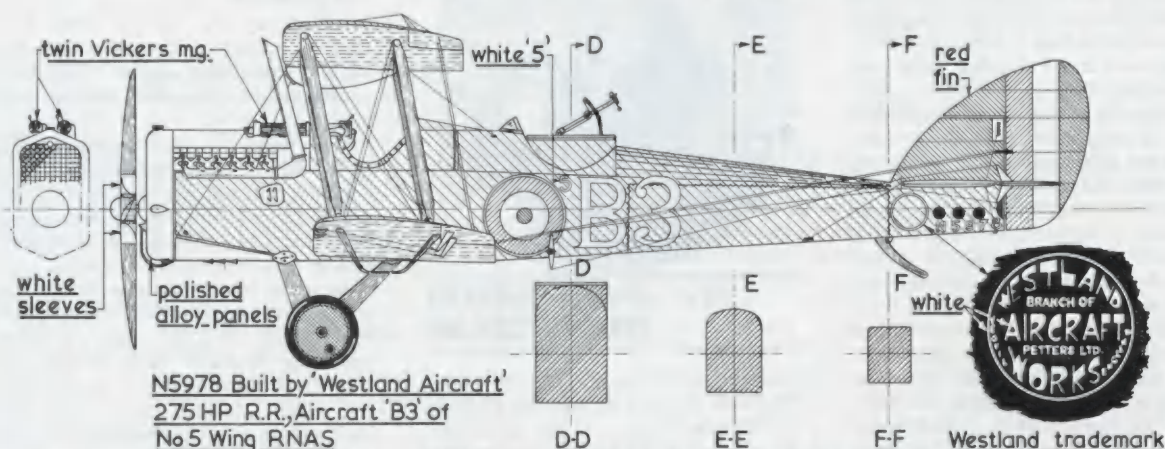
Before cementing the radiator back on to the fuselage nose the latter must be shortened by $\frac{3}{64}$ inch to maintain the correct overall length. After assembly of the radiator the fuselage must be blended to shape and section to give a smooth transition. The spinner, which led to the name *Miss Greencap*, is best produced by 'turning' a suitable diameter piece of spare sprue in an electric drill. It was of a straight conical section and is easily produced. The single exhaust pipe was positioned centrally and is made from scrap sprue or styrene card. It was of narrow oval section and was supported back against the leading edge of the upper wing.

These then, last month and this, are six basic modifications to your Airfix kit. Whether you build one of these variations or are content with 'B' of 25 Sqn RFC as in the kit, you might consider how the model can be even more improved if you discard the kit propeller and wing struts and carve them all out of wood. For the propeller, straight-grained mahogany is the ideal, but both that and the struts may as easily be carved from dry pine and, in the case of the propeller, stained. The result will, with care, take it into the museum class, though only very skilled modellers should contemplate this!



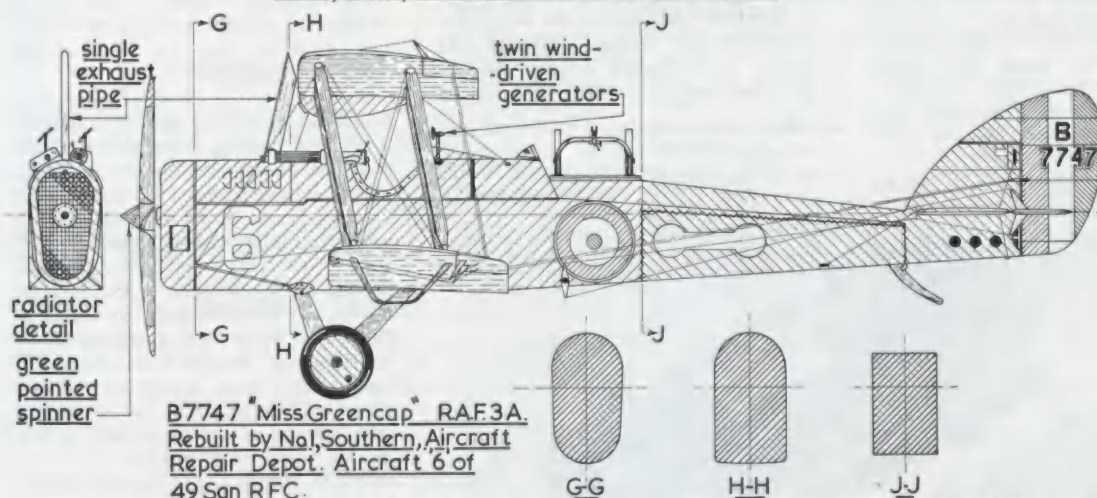
A7535 Built by 'Airco' 275 HP Rolls Royce, Aircraft 'H' of 25 Sqn. RFC.

FINISH:- natural varnished fabric overall, squadron markings and aircraft serial, black cockades above and below wings, metal and plywood panels, light grey, propeller, wing and undercarriage struts, dark varnish.



N5978 Built by 'Westland Aircraft' 275 HP R.R., Aircraft 'B3' of No 5 Wing RNAS

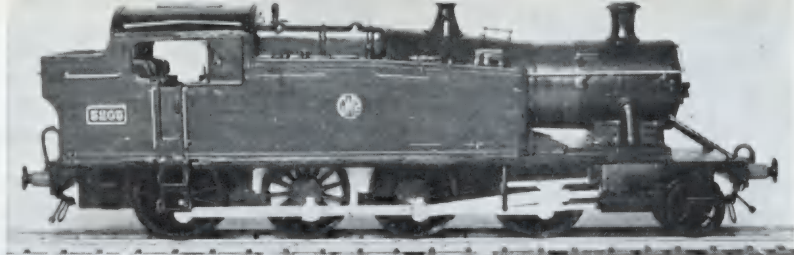
FINISH:- uppersurfaces khaki green, undersurfaces gloss clear varnish, sqn markings and serial, white, cockades and struts as above.



B7747 "Miss Greencap" RAF3A. Rebuilt by No 1, Southern Aircraft Repair Depot. Aircraft 6 of 49 Sqn RFC.

FINISH:- uppersurfaces, fabric, khaki green, lower surfaces, varnished fabric, all metal and plywood panels, light grey, sqd. markings, white, serial, black, cockades and struts, as above, propeller tips, light grey. p.s. Leaman. 1968.

THE 42XX Class 2-8-0 tank locomotives of the GWR were unsung work horses, mainly confined to short range freight, coal and mineral workings in South Wales. With their limited coal and water capacities they were seldom seen outside this area which made them strangers to many people. The class dates from 1910 and building continued into



The impressive 42XX series eight-coupled goods tanks of the GWR are yet another type possible by combining parts from several Airfix locomotive kits. Wheels in this case come from a 9F. Chassis extension is left unpainted in this view for clarity.

From Prairie to 2-8-0T

the 52XX series until the last locomotive 5264, was completed as late as 1940. Fifty-four of the engines were rebuilt into 2-8-2 tanks and renumbered in the 72XX series. All the 2-8-0Ts have now been scrapped, the last to go being 5235 which was withdrawn in September 1965.

There were many detailed variations to the standard design, the most noticeable being the shape of the front platform. As originally built these were straight but later batches were built with curved drop ends and some earlier locomotives were rebuilt to conform. Outside steam pipes were introduced with 5205 built in 1923—the subject of my model—but as with the curved drop ends, some of the earlier engines were also brought into line. There were other more detailed variations but these complicate the story beyond the scope of this article. The only sound advice is to select a photograph of an actual prototype. The one big snag here is that there is a very limited range of 42XX and 52XX numberplates on the market. Eames of Reading list 4217, 4268 and 5205. The Model Railway (Mfg) Company include the same two 42XX numbers plus 5264. Please include a stamped and addressed envelope and mention this article if you write to either of these suppliers.

Lack of time has prevented me making a motorised model but I have made



BY **NORMAN SIMMONS**

provision for conversion at a later date. I feel sure this can be done by adapting the Simplas Prairie Tank motorised chassis parts and I hope to demonstrate this in a later article. For my non-motorised model, which can of course be propelled with one of the Kitmaster motorised box wagons reviewed last month, I used eight coupled wheels from the *Evening Star* kit. This may be

Below: The complete locomotive laid out in component form showing the modified parts and the chassis. Compare with the working drawings opposite.

thought of as a bit of an extravagance but I know of no other source of coupled wheels so cheap as 7s 6d for four pairs, plus all the other useful bits and pieces you will have left over after cannibalising the kit. If you have already motorised your *Evening Star* using the Simplas chassis then these wheels will be lying about waiting to be used.

Fig 1 shows the amendments required to the Prairie Tank mainframes. They were cut between the second and third coupled wheels and the extension pieces made from two thicknesses of 40 thou plastic card cemented together, the outer piece being shaped to fit into the recesses moulded in the mainframes, Fig 1, and the inner piece cut to fit round the backs of these recesses, Fig 1A. When thoroughly dry the axle hole was drilled, starting with a small drill and progressively enlarging the hole until the *Evening Star* coupled wheel axles were a comfortable fit. It was found necessary to ream with the tapered handle end of a file all the coupled wheel axle holes so that the *Evening Star* wheels revolved freely.

Referring to the *Evening Star* instruction sheet the wheels used were number 2, 4, 3 and 5 in that order. Other amendments to the Prairie Tank mainframes are as shown at Fig 1. Coupling rods were built out of 40 thou plastic card with Peco 00/6 washers cemented both sides of the crank pin holes. The connecting rods, crossheads and cylinder covers, the latter amended as shown at Fig 2, are Prairie Tank parts and should be fitted as described in the Airfix instruction sheet excepting that I cemented Pin 'O' to the connecting rod and allowed it to fit loosely in the driving wheel crank pin hole instead of trying to cement it into the hole. This is because the hole is 'D' shaped and far too large to take the pin.

Fig 3 shows the amendments required to the tank, cab and bunker sides. The

AIRFIX magazine

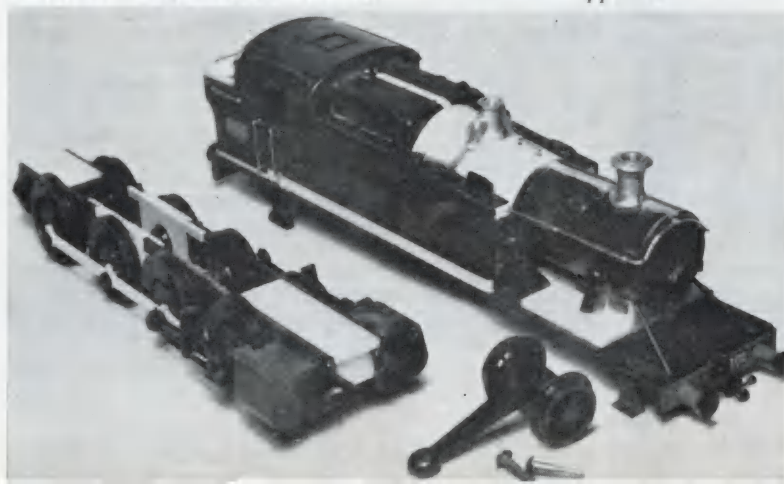
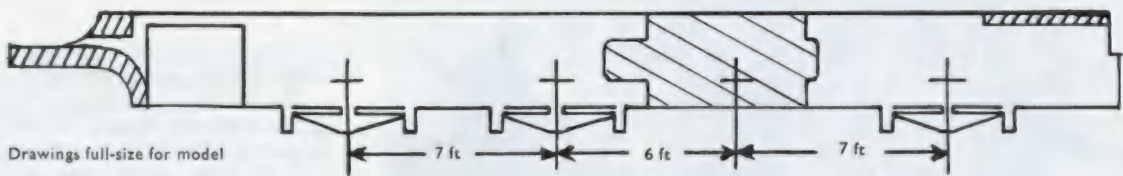


Fig 1



Drawings full-size for model

Close shading indicates parts to be removed
Wide shading indicates parts to be added

Note parts to be removed from cylinders



Fig 2



Fig 1a

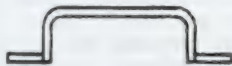
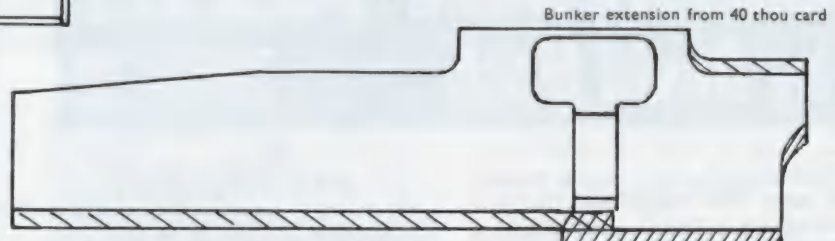


Fig 4



Note 2 mm strip inserted in centre, 40 thou card

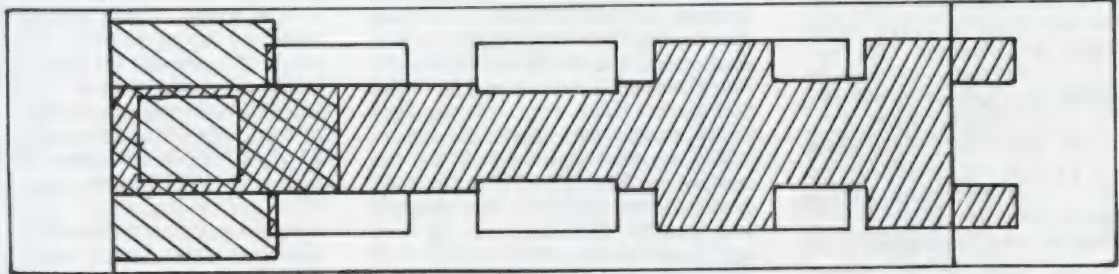
A



Side tank extension from 40 thou card

Fig 3

Note parts to be removed



A

B

60 thou plastic card

Fig 5

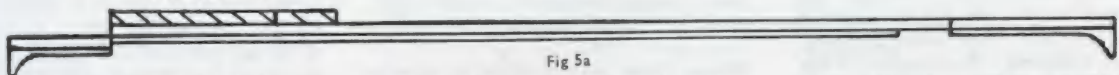


Fig 5a

opportunity should also be taken to remove the handrails, bunker steps, raised moulded lining and the ridge and rivets from the bottom of the tank sides. The 61XX Prairie Tank had a standard No 2 boiler whereas the 42XX 2-8-OT had a No 4 which was 6 inches larger in diameter and had a 6 inches wider firebox. Remove the firebox from the boiler top by cutting vertically down the sides of the firebox. Cut the firebox in half down the middle and widen it with a 2 mm wide strip of 40 thou plastic card. Now cement the firebox back in place on the tank tops—Fig 4 illustrates this. It will be necessary to trim some of the various fittings and mouldings on the tank tops to accommodate the extra width. The safety valve bonnet and top feed is further forward on the No 4 boiler. I replaced mine with a cast metal


one from K's which cost but 9d. Before fitting the new safety valve, the diameter of the boiler needs building up and I succeeded in doing this with four separate layers of 10 thou plastic card. These were added one at a time, allowing the cement to dry before each layer was added. Otherwise, too much wet cement between layers of relatively thin sheets of plastic card will have some very undesirable effects on the plastic when it dries out. Fit the new safety valve so that its centre is 15 mm from the front edge of the firebox. Boiler bands were made from strips of 10 thou plastic card and the top feed pipes from heated and stretched plastic sprue.

The smokebox was increased in diameter a scale six inches by cementing strips of plastic card, 2 mm in thickness, along the bottom edges and cementing

the two halves together around discs of 40 thou plastic card, 19 mm in diameter. A spare *City of Truro* smokebox front was fitted in place of that from the *Prairie Tank*. The chimney was removed and replaced by a K's 43XX chimney. This also cost 9d. The smokebox saddle and outside steam pipes need building up at the base with two thicknesses of 40 thou plastic card. The opportunity was taken of removing the plastic handrail and replacing it with 26 swg nickel silver wire mounted in split pin handrail knobs. After these were fitted, the interior of the smokebox was filled with a mixture of lead shot and Polyfilla and the 2 mm wide gap in the top filled in with Isopon which was afterwards filed and sandpapered to shape.

It was necessary to remove the rear

Continued on page 351



GERMAN ARMY

by David Nash 1914-18

THE artillery of the Imperial German Army was divided into foot and field regiments. These two branches were distinguished from each other by minor differences in uniform. The field artillery uniform was field grey in colour and was of the same basic pattern as that which was worn by the infantry.* The cuffs on both the Saxon and Prussian tunics were of the Swedish style. The tunic was piped in scarlet down the front edge and on the skirts; the collar and cuffs, however, were piped in black, which was the traditional facing colour of the technical troops of the Prussian Army. The buttons were made of a dull yellow metal for all field regiments with the exception of the 60th Mecklenburg which had white.

The shoulder straps were piped in the corps colour, either white, scarlet, yellow, light blue or light green. In their centres, in scarlet, was displayed the regimental number or cypher below a flaming grenade. This latter emblem, variously shaped, distinguished the Guard regiments who had no number. The Bavarian regiments, by contrast, had but the plain number.

The head-dress was either the pickelhaube or the cloth field cap. The former was similar to the infantry pattern, but was fitted with a ball, instead of a spike, for all regiments except those on the Bavarian establishment who had the more familiar spiked helmet. The usual drab cloth cover was worn over this head-dress displaying regimental number in scarlet on its front. The field cap was made of field grey cloth and had a black cap band. Scarlet piping ran around the top and bottom edges of the band as well as around the crown seams. The cockades were as previously described.*

The trousers were field grey with a thin line of scarlet piping running down

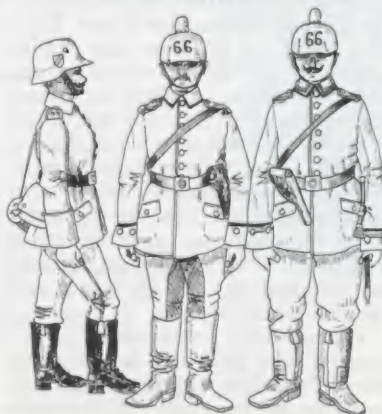
Part 3: Artillery

the outside leg seam and the grey greatcoat had black collar patches. The Guard regiments wore yellow litzen (lace) on their collars and cuffs.

The foot artillery wore a uniform very similar to that described above. It differed, however, in the following respects: the cuffs followed the infantry pattern, the Saxons with their own particular style and the Prussians with the Brandenburg. The shoulder straps were all edged in white with a scarlet regimental number or cypher in the centres.

The wartime development of the artillery uniforms were on similar lines to that of the infantry.† The shoulder straps on the 1916 *bluse* were in solid colour, scarlet for field artillery and yellow for the foot regiments. The cyphers and numbers remained the same, being in yellow on the scarlet strap and vice versa. The Guard artillery

Below, from left: Artillery driver in steel helmet and *bluse* type tunic; artillery trooper and unteroffizier in 1914-15 period uniform. Note helmet covers.



shoulder straps were coloured either white, scarlet, yellow or light blue.

The personal equipment of the foot artillerymen was identical to that of the infantry.* Field artillerymen were issued with a pack, which was invariably carried on a wagon. Normally they wore a blanket roll slung over the left shoulder. Their armament consisted of a pistol or revolver and a sword bayonet. All mounted gunners, the horse artillerymen, and the drivers of both foot and field regiments, were armed with a pistol and sword. When the steel helmet was introduced into the army, it was not issued to the gunners until all infantry requirements were fulfilled, and only by the spring of 1917 was it finally distributed.

With the differences noted above taken into account, figure conversions for artillery personnel thus follows the lines of the infantry conversion outlined in the last two parts. I've drawn some typical artillerymen as a guide. Several of the figures in the Airfix set will make gun crews, with their rifles, etc, removed, in particular the mortar men, those clubbing, those with grenades, and those with flamethrowers.

Both foot and field regiments were organised in an identical way. Each regiment consisted of two battalions (*abteilung*), each of three batteries. In 1914 all batteries, except those of the Horse Artillery, had an establishment of six guns. The horse artillery had only four guns in each battery and totalled eleven battalions, which were drawn from eleven different field artillery regiments. A horse artillery battalion was attached to each cavalry division.

In 1915, all foot and field batteries were reduced in size and the four gun battery became common throughout the army; the surplus pieces being used to create new formations. Field regiments were grouped in pairs to form a brigade, one of which was attached to each infantry division. The foot artillery manned the heavier guns which constituted the corps and army artillery. During 1916 much of the corps artillery passed to divisional control and by 1918 it was usual for divisional artillery to be comprised of eighteen batteries, twelve field and six foot.

The main armament of the lighter field regiments was the most common of German guns, the 7.7 cm field gun. This weapon, whose official German designation was Feldkanone 96n/A, was mounted on a shielded recoil carriage. The limits of elevation were -12° to $+16^{\circ}$ and the traverse was 8° . The maxi-

*See March issue.

†See April issue.



mum range of ammunition fitted with a time fuse was 7,874 yards, but by using a percussion fuse the range could be extended to 9,186 yards.

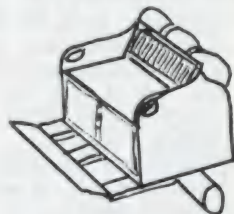
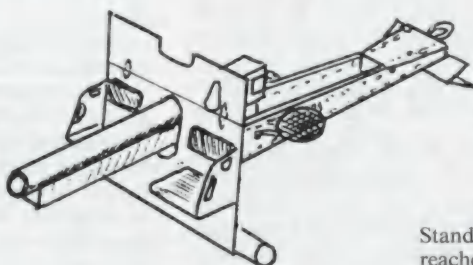
The 7.7 cm gun shown in the photograph was made by means of simple conversion from the Airfix Civil War cannon. The trail was hollowed, with the help of a sharp knife, and blocked at the end to give the effect of a box trail with parallel sides. The recoil chamber was cut from the square sprue in the German First World War Infantry box; the barrel was made from an empty Biro refill. The shield, seats and other smaller fittings were cut from card. The limber was taken from the same set, the foot board being cut away and replaced in card, which was also used to make the new sides and seat back. The sketches should make the manner of construction quite clear. All the riding crew were from the Civil War set with heads replaced by German heads and the lower skirts of the tunics lengthened with smears of UHU before painting.

Later on in the war, in an attempt to strengthen the divisional artillery, a 10.5 cm field howitzer was introduced as a supplementary weapon. It was modelled on the 7.7 cm and was issued to one battery in each battalion.

The foot regiments served the heavier guns which included the more common pieces of 10, 12, 13, 15 and 21 cm calibre, as well as the larger guns, howitzers and mortars up to the 28 cm railway guns, and the 42 cm siege mortars.

Traditionally, the Prussian guns were painted light blue. In 1914 this colour had become a pale blue grey but was soon changed to field grey. In the latter stages of the war most guns were painted in a camouflage pattern of which there were three main types; the geometrical lozenge pattern as used on aircraft, a wavy design and a sharp angular style

Above: A complete German field artillery team with 7.7 cm gun and limber modelled from Airfix US Civil War sets. Figures are also from the set with German heads substituted. **Below:** Sketches show the construction of the gun and limber, both modifications on the Civil War items. Note seat and recoil spade added from card on the trail. Note also the seats on the gun shield.



similar to that described earlier† as being used on steel helmets.

In 1914 all guns were drawn by teams containing six horses. As the war progressed, the German Army became hampered by an acute shortage of horses of every description. Of necessity the teams were reduced to four and very often oxen and other beasts were utilised to make up the requisite number. This shortage and the resultant lack of mobility did not matter too much in positional warfare but it greatly handicapped the Germans in their offensive of March, 1918. And during the retreat of August-November much material had to be abandoned or destroyed because of the impossibility of transporting it to safety.

Communications were provided by several means. The mainstay of the system was, of course, the field telephone but so often were the cables broken during a bombardment, that the gunners were forced to use visual signalling for communication with the infantry. Flags were used, but the front line soldiers came to rely increasingly on coloured flares and rockets.

The artillery ammunition at the start of the war was of many varied types.

Standardisation had, however, been reached in 1917 by which time four basic types of shell were being employed by most of the different calibre guns. These were the high explosive, shrapnel, gas and the so called long shell which, for ballistic reasons, carried a greater range than that of the normal projectile. After 1916 the use of artillery was severely restricted by a shortage of ammunition. In 1917 defensive barrages were limited to three minutes rapid fire followed by five minutes deliberate fire, they then ceased unless requested a second time by the infantry. Against this pitiful reply the allies were firing barrages which, at times, lasted literally, for days.

PLASTIC MODEL BOOK

IMPORTANT new book for plastic kit enthusiasts is to be published next month (June) by Patrick Stephens Ltd, Brooks House, Upper Thames Street, London EC4. Called **HOW TO GO PLASTIC MODELLING**, it is written by Chris Ellis, Editor of *Airfix Magazine*, and is a comprehensive 80,000 word guide to the hobby covering such topics as transfers, markings, painting, detailing, converting, research, display, materials, and modelling techniques. There are appendices giving sources of supply, listings of available paints and transfers (and where to get them), a glossary, and a choice of 'best buys'. In addition there are numerous conversions including aircraft, tanks, and ships, most of them hitherto unpublished. Just two of the conversions from the book, a Hawker Fury in 1:72 scale and a Churchill AVRE in 1:48/1:76 scale, are shown below. Further details next month. The book will cost 25s and may be ordered from booksellers or direct from the publishers.



Above: A close view of the gun, limber, and figures. Compare with sketches.

May, 1968

NEW BOOKS

REVIEWED FOR MODELLERS

Latest Editions

OBSERVER'S BOOK OF AIRCRAFT, 1968 EDITION, by William Green. Published by Frederick Warne & Co Ltd, Bedford Court, Strand, London, WC1. Price 6s.

CIVIL AIRCRAFT OF THE WORLD, by J. W. R. Taylor. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 21s.

THESE are the latest editions of two annual reference books which are well-known to aviation enthusiasts. The Observer's Book is still the bargain of the year at its ridiculously modest price. The traditional format is followed and 155 aircraft and helicopters are described. These are illustrated by pictures and three-view silhouettes in the case of the aircraft. As the 'old-timers' still flying are now covered in companion volumes (the 'Basic' books), this 1968 edition covers latest types in service, either new designs or most recent variants. Newcomers include the Jaguar, C-5A, and Boeing 747.

Civil Aircraft of the World is the successor to the annual *Civil Aircraft Recognition* which has appeared for the last 15 years. The new version of this popular book has grown somewhat, now has hard covers, and a corresponding price increase. It is still splendid value, however, packed with pictures and data and covering everything from the Anson to the Tu-144. All principal types have silhouettes in addition, and there are notes on each type plus an index.

Radio Control

RADIO-CONTROLLED MODELS, by R. H. Waring. Published by Museum Press Ltd, 39 Parker Street, London, WC2. Price 17s 6d.

THIS book is now in its second edition. It introduces the newcomer to the principles of radio control as applied to aircraft in particular but also model ships. Emphasis is on the conversion of radio signals into mechanical movements rather than on the building of R/C equipment, although the types of equipment available are comprehensively described, especially with regard to their working principles. The text is concisely and simply written and is enhanced by the clear illustrations which, in the main, appear on the same page as the description. Not a great deal of circuitry is included and a follow up volume by the same author with the emphasis on transistorised equipment would be a very welcome addition to the subject.

For Train Enthusiasts

THE MIDLAND & SOUTH WESTERN JUNCTION RAILWAY, by Colin G. Maggs. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon. Distributed by Ward Lock & Co Ltd. Price 35s.

AT the time of their independent existence the smaller railway companies such as the M & SWJR were unable to indulge in the publicity so carefully exploited by the larger concerns so that when their story comes to be told so much little-known information comes to light. Herein

probably lies the chief fascination of this book.

The company operated services over the 97 miles between Cheltenham and Southampton and 60 of these miles were over its own metals. It had access to traffic from the north via the Midland Railway and Southampton docks via the LSWR in the south. This, unlike some of the smaller companies, gave the line some potential, as Sam Fay in the short time he managed its affairs, and two world wars were able to demonstrate. Nonetheless, there were many hard times and the book records all these, together with the story of relegation following absorption by the GWR in 1923 and rapid run down in BR hands.

STEAM LOCOMOTIVES IN INDUSTRY, by the Industrial Locomotive Society. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon. Price 42s.

A FASCINATING variety of over 150 industrial steam locomotives are illustrated and briefly described in this 127 glossy page David & Charles Locomotive Study. Most are 4 or 6 coupled tank locomotives but saying that is just the beginning since there are inside and outside cylinder types, side tanks, well tanks, saddle tanks, the peculiar 'ogee' tanks, in fact a host of different types all with differentiating features. There are, of course, a few bizarre locomotives such as the 0-6-0 'main line' tender locomotives from the Earl of Durham's Collieries which survived NCB ownership until the nineteen-fifties, an outside cylinder 0-8-0 tank which lasted until 1965, a Beyer Garratt and four crane tanks, to mention just a few.

Most of these locomotives are now scrapped or out of service but during their working days they were often hidden behind factory walls or across acres of private industrial land, so that the uninitiated—we count ourselves amongst them—might well feel surprised at some of the samples illustrated. For this reason some more factual information, particularly regarding dimensions, would have been appreciated. Superficially at least there would appear to be some wonderful conversion possibilities using the Airfix 'Pug' kit as a basis. However, as an introduction to the subject this well-produced book is bound to attract many devotees.

Short Story

SHORT AIRCRAFT, by C. H. Barnes. Published by Putnam & Co, 9 Bow Street, London, WC2. Price 84s.

SHORTS rightfully claim to be the oldest firm of aircraft manufacturers still in existence. Two brothers Eustace and Oswald built balloons after a visit to the Paris Exhibition in 1900 and continued their adventures in aviation after Wilbur Wright's visit to France in 1908 by producing aeroplanes. The world's first aircraft production line was set up by the two brothers and a third, Horace, who joined them.

Perhaps the closeness to the Medway at Rochester had something to do with the Short Brothers' interest in flying boats. They built seaplanes for the Navy during the first war and later went into the airship business at Cardington, but it was with the 'C' and 'G' class flying boats by which those interested in pre-war aviation will remember them. It was natural for the success of these aircraft to be turned to a military purpose and the Sunderland, backbone of Britain's air mastery of the sea during the war, proved that the U-boat menace could be mastered by long-range aircraft.

This book, which is one of a series published by Putnam about the British aircraft manufacturers, is comprehensive in its content and illustration. The author has had access to both the company's archives and the memoirs of some of

Continued on page 351

AIRFIX magazine



The Wellington Mk I differed considerably in detail appearance from the more familiar Mk III as made by Airfix. Reader D. E. Tilley sent us this rare photo of Wellington I, L7770, the first of thousands of Wellingtons built at Chester. This machine went to 99 Sqn in August, 1939, and was the only Chester-built Wimpy in service when war began.

Early Wimpy

ALAN W. HALL BUILDS A WELLINGTON Mk I FROM THE AIRFIX Mk III KIT

SPURRED on by the success I achieved with hollowing out the Anson XII fuselage to fit side windows I attempted to do a similar job with the Airfix Wellington kit and set transparencies into the fuselage sides, characteristic of the earlier marks. The idea was a good one as this is very useful and something that could be applied to a number of other major conversions like the Lancastrian and Stratotanker.

The major problem comes in the fact that acetate sheet will not adhere satisfactorily to polystyrene using the normal adhesives. Combine this with a lengthy gap left by the window arrangement and you have a fuselage that springs about every time you touch it. After having cut out the window shape and carefully fitted the acetate transparency in each fuselage half my first discovery was that the removal of $3\frac{1}{2}$ inches of fuselage on each side made the fitting very difficult. There was also the problem of being able to provide strength sufficient to hold the acetate in place, without resorting to complicated cross-bracing inside the fuselage. If you do want actual glazed side windows the solution is to back the acetate sheet with a piece of plastic card painted black (if you can't get self coloured material) and at the same time fill in the fuselage with transverse cross-braces at window level to prevent flexing. Simplest method of all, however, is to use black transfer sheet as described here.

Phillip Moyes' *Bomber Squadrons of the RAF* published by Macdonald is perhaps best for further reference as all of the squadrons using the Wellington I are depicted in photographic form. Profile No 125 on the Wellington I and II is also very useful.

STAGE 1 Before cementing the cockpit floor and pilot seats in position the two sections to be glazed immediately below the cockpit transparency are removed. This was done by drilling a small hole in the corners of both the square and diamond shaped areas on each fuselage side and then cutting out the unwanted pieces with a fret saw. Interior detailing can next be added. This is particularly important in the forward fuselage as the added transparencies make the inside look very bare if viewed from fairly close in.

Below: Port and starboard views of the nose showing the areas of glazing added (from acetate or Polyglaze) and the nose cut away to take the old pattern turret.

STAGE 2 The fuselage is assembled and left to dry thoroughly. When this has been done the turret areas are removed. The exact position of the cuts to be made should be transferred from the plan on to the model and the job done with a fine toothed modelling saw. Detailing can again be added but not before the male formers for moulding the turrets are fitted. These are made from balsa scraps. Fitting into the turret areas exactly, except for the thickness of the acetate sheet to be moulded, they are filled with a mixture of talcum powder and dope, mounted on small handles and left to dry. Female moulds from $\frac{1}{8}$ inch sheet obechi are prepared.

STAGE 3 The sliding hatch in place of the astro dome on the fuselage roof can be now made. This simply consists of a thin piece of plastic card slightly heated over a candle flame and moulded into the contour of the fuselage. Very thin runners for the hatch are added on each side made from heat-stretched sprue.



STAGE 4 Nose and tail turrets are next moulded, trimmed and stuck in place. Similarly the two fuselage windows can be added. Both of these could have been done earlier, if desired, before putting the fuselage halves together but the job is fairly simple and therefore can be left to this stage.

STAGE 5 While waiting for various parts to dry off, attention can be paid to the wings and engine nacelles. A look at the plan will reveal that the engine nacelles on the Mk I Wellington were much shorter than on the later versions. To achieve this I assembled the wing and nacelles according to kit instructions but once they were dry I cut off the forward part of the nacelles at an angle to the leading edge of the wing. This was done to allow for the change of contour of the nacelle and also to allow a good key for the balsa wood plug which was then fitted to each remaining stump.

Scale drawings on next page
Instructions continue on page 350



Note: scale applies to main side view and details only

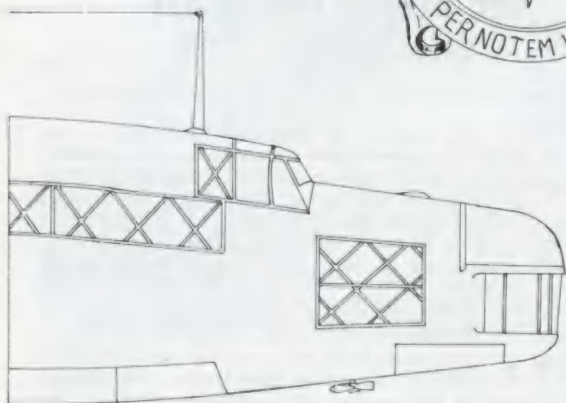
1:72 Scale



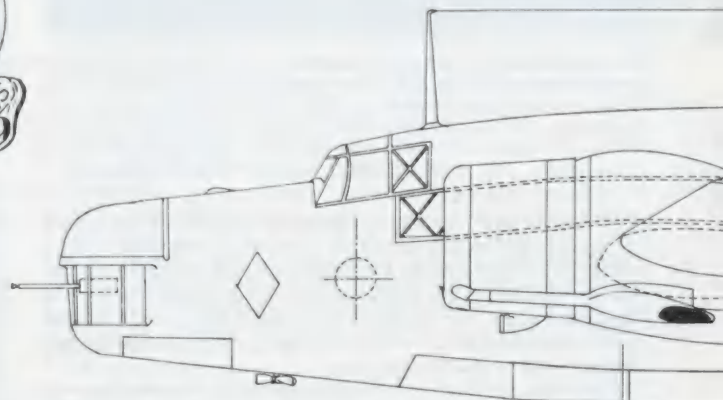
0 Feet 6



Sqn badge: white background, olive green bat motif, black numerals and motto



Large area of glazing, starboard side only

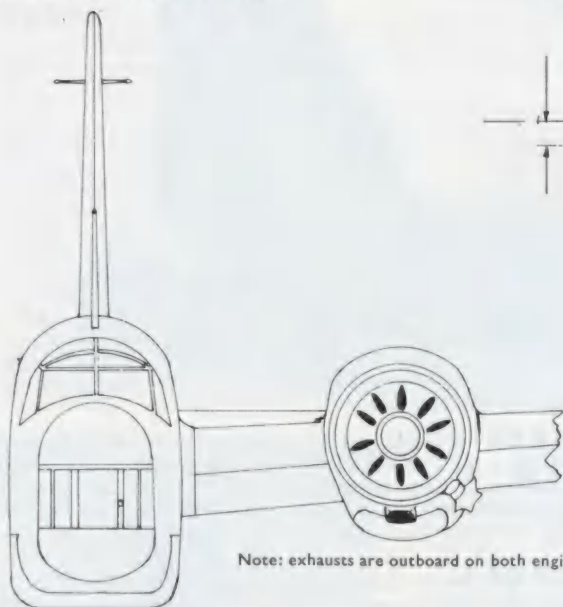


Diamond-shaped window port side
Broken circle indicates position of squadron badge each side of nose

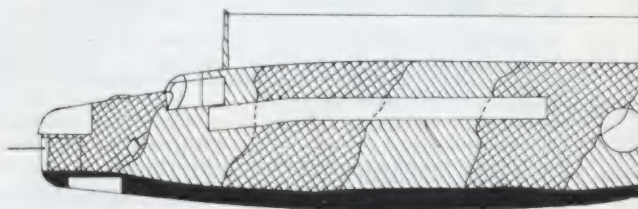
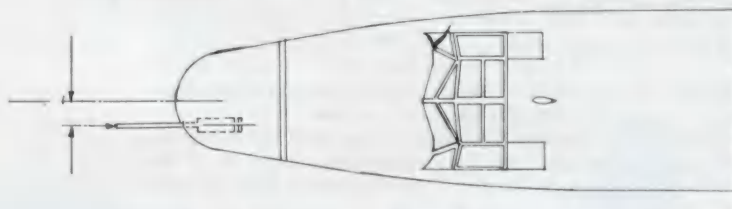
Note diff
when ret

Note horn balances as also shown in side view

Top view of nose canopy; note offset machine gun, $\frac{1}{8}$ inch to port in model

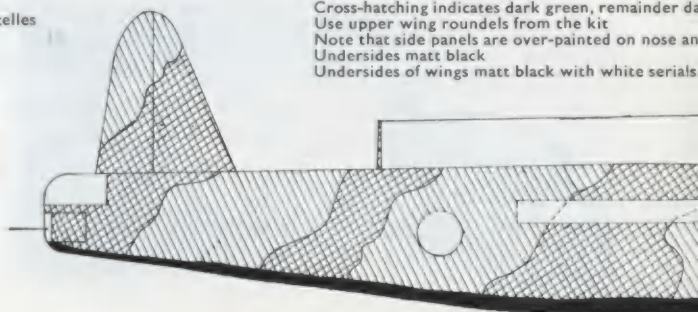


Note: exhausts are outboard on both engine nacelles

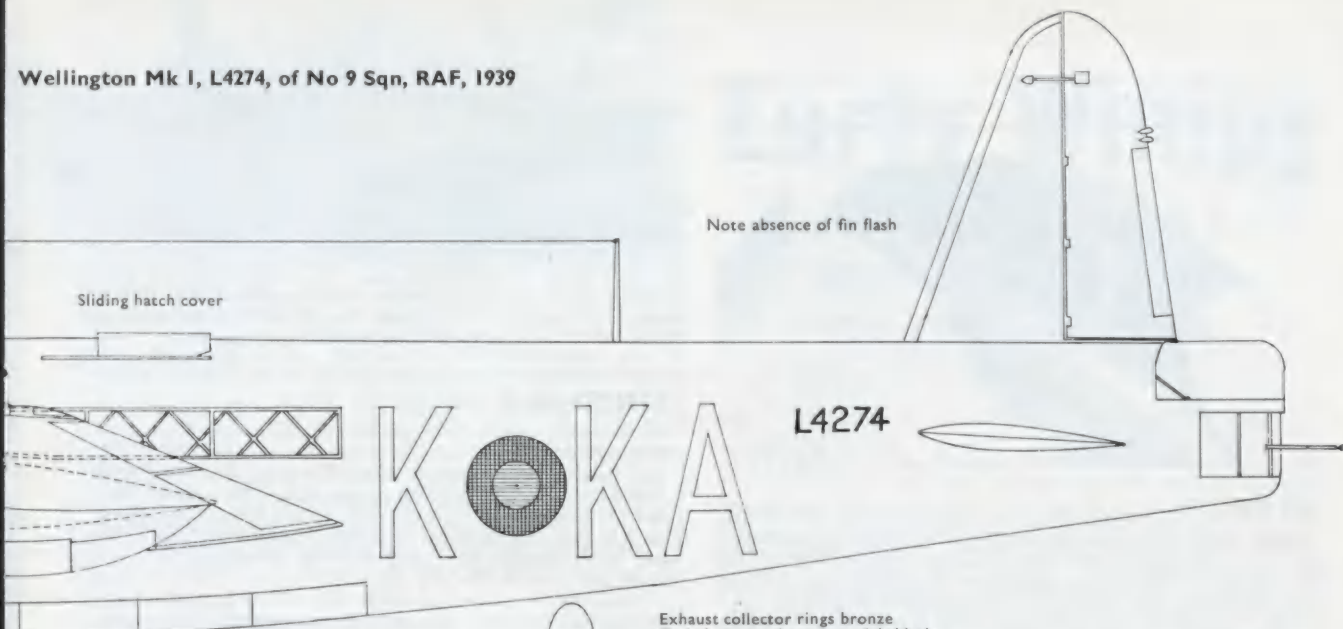


Cross-hatching indicates dark green, remainder dark
Use upper wing roundels from the kit
Note that side panels are over-painted on nose and
Undersides matt black
Undersides of wings matt black with white serials

Drawings by Tony Boulton

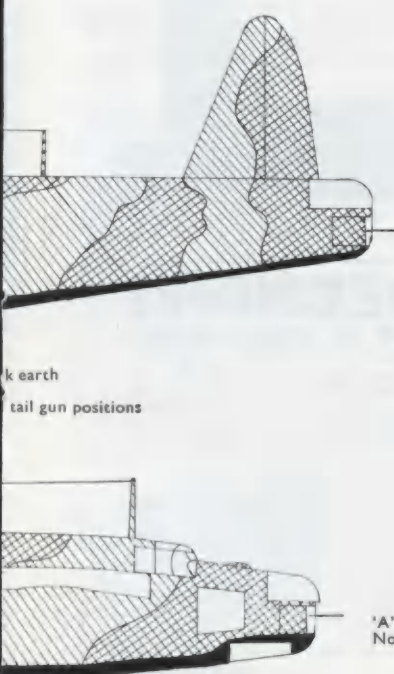
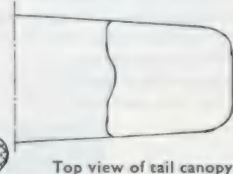
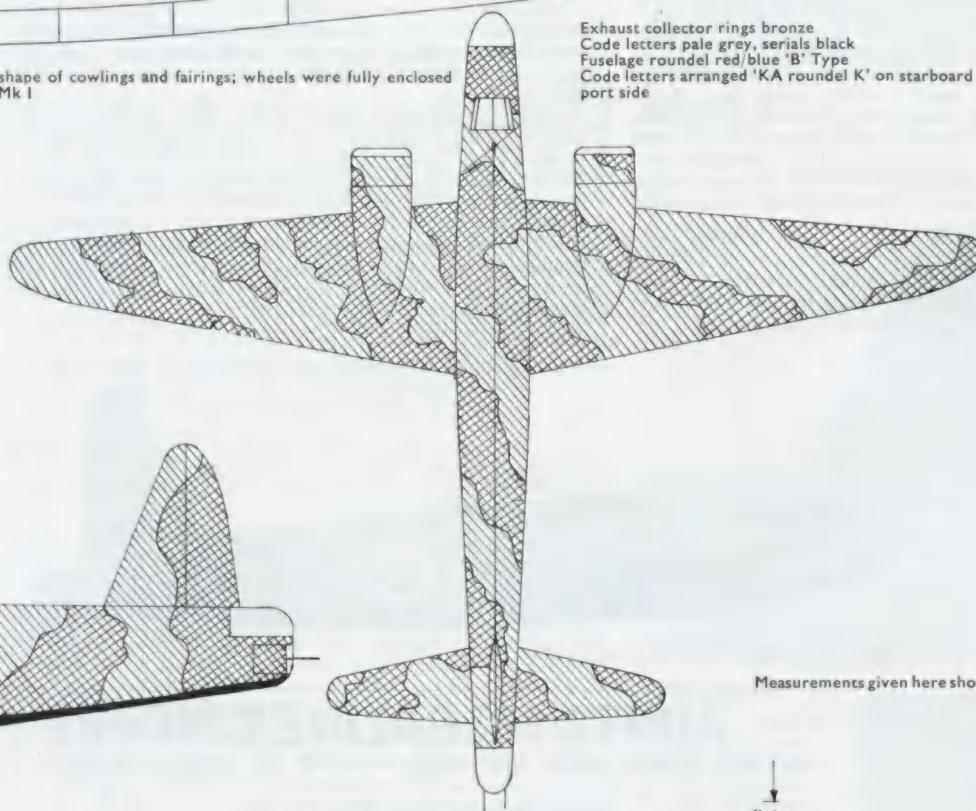


Wellington Mk I, L4274, of No 9 Sqn, RAF, 1939



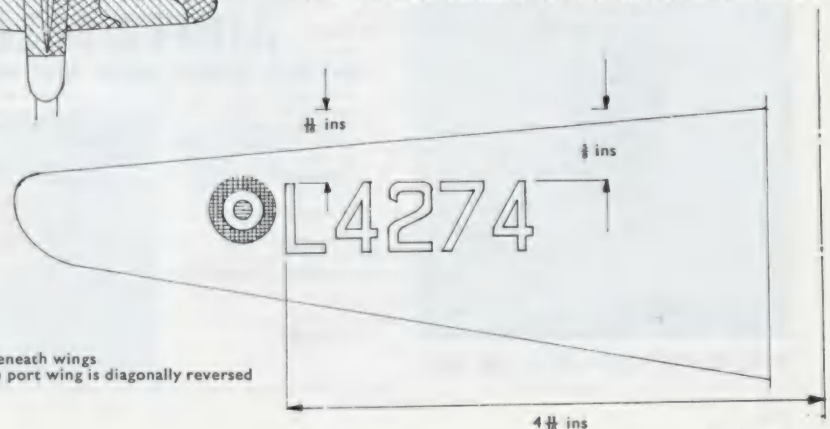
ifference in shape of cowlings and fairings; wheels were fully enclosed
tracted on Mk I

Exhaust collector rings bronze
Code letters pale grey, serials black
Fuselage roundel red/blue 'B' Type
Code letters arranged 'KA roundel K' on starboard side, diagonally opposite to
port side



k earth
tail gun positions

Measurements given here show precise serial positioning in 1:72 scale



'A' Type roundels beneath wings
Note: serial beneath port wing is diagonally reversed

Fuselage centre-line

Wellington I — continued



STAGE 6 Assembly of the undercarriage and engine nacelles can continue after the new balsa nacelle section mentioned above has been sanded down and filled. Note that the wings are not fitted to the fuselage until the rest of the model is painted and complete. For ease of packing I did not stick the wings of my own model at all. The joints are quite good ones and it is easier to transport models without their wings—it certainly saves space! The cowlings came from a Sunderland and so did the two props and spinners. The cowlings in the kit appear too small according to the plan and the Sunderland ones looked more realistic. If you're not too fussy and don't want to cannibalise a Sunderland, stick with the kit cowlings. Finally from scrap sprue two exhausts are shaped with file, knife, and glass paper. A small balsa air intake is added under the centre of the cowling and undercarriage doors can be fitted made from plastic card.

STAGE 7 Final assembly can now take place. The tail unit, sections of which have been assembled during the rest of the construction, are placed in position. Nose and tail guns are made from



stretched sprue or taken from other kits. Radio masts are added, sanded down to the correct section from plastic card. The tailwheel from the kit and a D/F loop, taken from a Ju 52 3/m kit completed the model, though the latter could be formed from wire.

FINISHING

Standard green/dark earth camouflage is applied to all upper surfaces, black to the undersides. When complete and dry the fuselage windows were added cut from black solid colour Yeoman transfer sheets. The exact dimensions were traced from the plan onto the reverse side of the transfer sheet and the required piece cut out with a sharp knife. The geodetic construction that shows through these windows was applied by fine brush. Straight lines being achieved by running the brush along the bevelled edge of a ruler.

Roundels came from the spares box. A little hunting around can produce all that is required and the upper wing sizes are the same as those in the kit in any case. Serials underwing came from HisAirDec sheets and the fuselage serials came from Yeoman $\frac{1}{8}$ inch sheets.

Fuselage codes are a different matter. There are no commercially available transfers that fit the size and come in the right shade of grey. The only alternative is to paint them on by hand. To do this more accurately I cut out the letters following the plan by overlaying a piece of tracing paper and cutting to produce a stencil. The tip of a fairly large soft brush was employed to stencil the basic shape on the fuselage and then the letters can be touched up. I was surprised how accurately this worked and will be trying the method on other large letters when these are required under similar circumstances.

Right: Fine flying view of a Wellington I clearly shows the shorter engine nacelle and the long glazing strip in the fuselage sides ('Flight' photo). Compare with picture of completed model (above, right). Note the new front and rear turret canopies which have to be moulded from acetate. Picture above illustrates Stage 5 on page 347



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the men who helped to make the name of Shorts famous. The appendices list all Shorts' constructors numbers, serials and registration markings. Apart from aircraft which were built, the book also deals with the design projects that in a number of cases never left the drawing board. It is a valuable work of reference.

USAF bombers

BOMBER AIRCRAFT OF THE UNITED STATES, by Terry Morgan. Published by Arco and available from W. E. Hersant, 228 Archway Road, London, N6. Price 16s 9d, postage paid.

FOR a relatively low price this is a picture book reference to the bombers and maritime reconnaissance aircraft at present serving with the United States Air Force. Sixteen aircraft types are covered with a short preamble of their history and service followed by a number of big photographs. Aircraft types range from the B-26K resurrected for the Vietnam battles, and the B-52 Stratofortress intercontinental bomber. In all there are 94 illustrations.

Aircraft annual

AIRCRAFT 'SIXTY-EIGHT, edited by John W. R. Taylor. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 12s 6d.

IAN ALLAN'S aircraft annual appears this year under a different title but is nevertheless the same interesting and useful series of articles under the editorship of the well-known and respected 'JWT'.

Apart from Mr Taylor's yearly comment on aviation in which he touches on all of the major events of the past year and looks forward to the coming twelve months, there are articles on space, ballooning, roadworthy aircraft and blind landing, to mention but a few.

An article by Harry D. Jackson titled 'Aircraft from under the Sea' gives an interesting insight into the experiments carried on during the 1919-39 period of carrying aircraft on submarines. Also of interest is the story by Andre Van Haute of the Belgian resistance to the Nazi invasion in 1940 and the way in which their small air force faced the hordes of enemy bombers.

Fighting Cocks

43 SQUADRON, by J. Beedle. Published by Beaumont Aviation Literature, 11 Bath Street, London, EC4. Price 38s.

THE 'Fighting Cocks', as No 43 Squadron is known, can claim to be one of the most famous of the squadrons still in existence in the dwindling ranks of the RAF. Founded at Stirling in 1916 and commanded by Captain William Sholto Douglas, now Lord Douglas of Kirtleside, it has been in almost continuous existence since that time.

This book is well written by a former officer of the squadron. He gives many stories of the personalities connected with the life of a typical fighter unit, particularly during the last war, and he skilfully guides the reader round the rather monotonous routine of peacetime flying. At the back of the book useful lists of the aircraft, their serials and codes, which were used by the squadron during its career are given.

LAATEST edition of the Revell (GB) Ltd kit catalogue has just been published and illustrates all available Revell kits and motor racing items in colour throughout. It costs 1s 6d from Revell stockists. Tamiya have also recently published a new catalogue showing all their motorised tank kits, cars, aircraft, and motorised ships. Beautifully produced, with colour covers, it costs 3s, postage extra, from Jones Bros & Co Ltd, 56 Turnham Green Terrace, Chiswick, London W4, who sent our review copy.

Basic Railway Modelling—from page 343

buffer beam from the bunker back, part number 15, and a strip 2.5 mm wide from the base of the cab back, part number 12. The tank front, part number 17, was increased in height by 2 mm. The footplate was amended as shown in Fig 5 and a piece of 60 thou plastic card as indicated in the shaded area on Fig 5 was cemented to form a raised platform on the forward part of the footplate. As I hope Fig 5 indicates, the curved drop end at the front of the Prairie Tank footplate has to be removed forward of the point marked 'A'. The stepped down rear end under the bunker has to be cut at point 'B' and the rear part cemented back in place in line with the rest of the footplate. The edge-on view, Fig 5A, I hope makes this clear.

After making all these amendments the body was assembled much as described in the Prairie Tank instruction sheet, stages 18-30. Do not of course cement the chassis to the body if you intend fitting a motorised chassis at a later date. The chassis was fitted by driving small brass round head wood screws through mounting plates cemented between the mainframes, and into

holes drilled in the smokebox saddle at the front end and a block of wood fitted inside the bunker at the rear end.

The front footplate forward of the cylinders I made out of a piece of Prairie Tank footplate left over from my first Mogul conversion undertaken about a year ago. (Never throw anything away—you never know when it is likely to come in handy!) Of course a piece of 40 thou plastic card would do if you are without a spare piece of footplate. The boiler stays, part number 31 described at stage 34 of the Prairie Tank instruction sheet, are rather essential items to help support the forward part of the footplate since there is not a lot of area in which to cement this part in place. The pillar which takes the front pony truck I cemented to the underside of the front mounting plate. I used the Prairie Tank trailing pony truck wheels, parts number 28 and 28A, as these are nearer to scale. If you are screwing the chassis to the underside of the smokebox the pony truck needs trimming so that the screw is not obscured.

The rear buffer beam needed deepening by a 2 mm strip of 60 thou plastic

card. Handrails either side of the cab entrance were fitted in handrail knobs but the horizontal rails on the sides and back of the bunker were simply bent up 'U' shaped and the ends inserted into holes drilled with a number 77 drill. The ends of the wire were afterwards bent over inside the bunker and held in place with a lead shot/Polyfilla mix which was put in to add ballast to the rear end. Painted black this gives a fair representation of coal although I shall in time glue in some small pieces of real coal.

In pre-war days the GWR painted these locomotives green and black unlined. Either GREAT WESTERN or, from the mid-thirties onwards, the circular GWR totem adorned the tank sides. During and after the war they were painted all black and this should be the livery of your locomotive if you use the later GWR initials insignia or the BR crest. Buffer beams were of course red and in GWR days the engine number in yellow-shaded black letters was painted front and back to the right of the coupling hook. The safety valve bonnet would have been painted and it is most unlikely that any were polished.

BUILDING A 4mm SCALE SWING BRIDGE

by michael adress

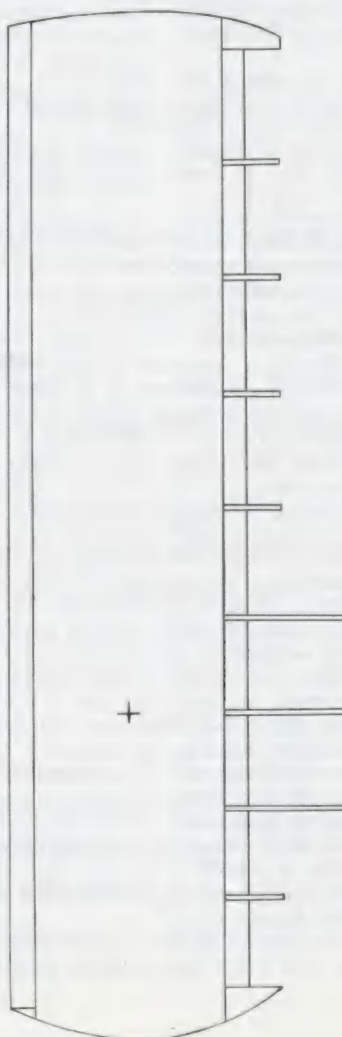
KIT conversion is a very satisfactory way of building structures for your layout for several reasons. The usual aim is to make a model of a prototype for which no kit is available—or to have something a little different from anyone else's layout. The Airfix kits are especially useful for alteration purposes as they are very reasonably priced and provide an array of nicely detailed parts, making construction much quicker and easier than if all the pieces had to be built up from scratch. However, there are also other less obvious benefits of kit conversion. It is possible to super-detail any kit to some extent but by carrying out a conversion we may be able to model a prototype which itself has more detail and is more interesting model-wise. The ideal model structure is one which is fairly small, as most of us have space for only a small layout where large structures usually look out of place.

I recently bought an Airfix Girder Bridge kit and built it in a modified form as a small swing bridge. I have not yet fitted the finished model into a layout and although the bridge span can be turned by hand, I have not made any arrangement for turning it by remote control. However, it should be possible, without much difficulty, to arrange to turn the bridge mechanically from the baseboard edge using Meccano gearing, as with the gates in my recent Timber Yard model. It would be simplest of all to fix the bridge span permanently in the closed position and to add strengthening pieces across the joints at each end, on the undersurfaces to make a rigid trackway. This will be almost as effective scenically as an opening bridge and much easier to build. If the span is made to open it will certainly be necessary to strengthen it or to arrange for some support beneath the ends when it is in the closed position, as otherwise the span may sag under the weight of a train passing over it, putting the rails out of alignment at the joints at each end of the span. Thus, if you build this model for your layout you will need to do a little experimenting on your own account to decide how you want to fit it into

place and how you arrange the opening and closing, or whether you are going to have it fixed in the closed position. Remember, there would be a speed limit over such a bridge and it would be most unlikely on a main line. It is ideal, however, for a branch line or dock layout.

Now for the details of the construction. Begin by assembling the two sides of the bridge. This is done exactly as described in the kit instructions except that the two angled end

Fig. 1. Bridge decking, half full-size. Double all dimensions for model. Cross marks pivoting point.



pieces (15 and 17) are omitted at one end of the bridge. Part 19 is sawn vertically down the centre and the two halves are glued, one to each of the two sides, at the unfinished ends. File the cut edges of the two halves of part 19 down after the glue has set firmly, until they are flush with the ends of the upper and lower main girders (parts 2, 3, 9 and 10). Then cover each of these ends with a piece of 60 thou plastic card 6 mm by 69 mm.

Next you must shape one end (the end which has the corners notched) of part 21 to a curve with a radius of 187 mm. If you cut and file the end to a smooth curve so that the centre extends 3 mm beyond the sides, you will have a suitable curve. Now try part 21 in position between the two side pieces, at the angled ends of these pieces. Extend the notches until the decking piece fits in place so that the curve of its end can be continued on to the ends of the sides. Glue part 21 in position at this stage together with three of the top bracing struts (the fourth strut at the end is omitted), and when the glue has set, round off the lower angles of part 16 and 18 slightly to match the curve of the end of part 21. Now cut the notched end of part 22 to a curve with a radius of 83 mm (that is a curve so that the centre extends about 4 mm more than the sides) and try it in position between the two side pieces. The decking at this end must fit with sufficient extension beyond the sides of the bridge for the curve of the end of the deck to be continued to reach the outer edge of the upright piece forming the end of the side.

All this sounds a bit complicated but it is really only saying that the ends of the bridge must be smoothly curved and of correct radius curve to match up with the piers at either side of the bridge without leaving any gaps and without any jamming when the span swings. As the point about which the span turns is closer to one end than the other the radius of the curves at the two ends will not be the same. Having decided on the correct positioning of part 22 and having extended the notches as necessary, cut the other end of this part to fit flush against the end of part 21, which has already been fixed in position, and then glue it in place. Cut and fit small pieces of 60 thou plastic card to fill in the gaps at either side of the end of part 22 to complete the smooth curve of this end.

The walkway along the side of the span is the next stage in the construction. Cut the following pieces of 60

thou plastic card: five pieces $1\frac{1}{2}$ mm \times 15 mm. Three pieces $1\frac{1}{2}$ mm \times 32 mm. Two pieces 8 mm \times 15 mm. Glue these pieces to the undersurface of the side of the bridge extending out from the side as shown in Fig 1. These form the supports for the walkway. The planking is strips of 10 thou plastic card about 2 mm wide and glued in place with a gap of 0.5 mm or so between each plank. The 12 posts are 15 mm long and are made from matchsticks cut lengthwise into four, giving strips about 1 mm by 1 mm.

Make the railings from black thread. This is most conveniently done by threading the material on to a needle and using this to make a hole through each post 7 mm from the upper end. String all the posts on to the thread and then glue the posts in position, one to the end of each support, making sure that they are truly vertical. When the glue is set hard, cement the thread to each post in turn where it passes through the holes, taking care to keep the thread taut. Then bring the thread back along the top of the posts, again cementing it to each post in turn, keeping the thread on the stretch all the time. This is a convenient time to paint the structure so far assembled. I painted the top of the decking, except for the part at each edge, and all surfaces of the planking grey, and all other parts matt black.

The small bridgeman's cabin can be built at this stage. I made the walls and roof from 1 mm thick card to the dimensions in Fig 2. Bevel at the corner edges, assemble and then cover with pieces of the commercially available corrugated copper sheeting cut to size and glued in place. Paint matt black inside and out, and then fix in position on the wider part of the walkway as in the photos.

The left over piece of part 22 is used for the decking for the approaches to the span. Cut it into two pieces and shape one end of each to a concave curve to match the curves of the ends of the span. I added some short lengths of girder (cut from the left-over parts 15 and 17) to support each piece of decking so that the height to the top surface of the decking is 13 mm. Paint the top surface of



Above: The completed swing bridge in the open position. Compare to heading view which shows it swung 'close'. **Below:** The centre pier showing steps and pillar.



the decking grey and all other parts matt black. One of the photos shows these two structures after they have been mounted on their stone bases. The stone bases are built up from .60 thou plastic card and are 13 mm high, 62 mm wide and deep enough to suit the size of the decking pieces. I covered the bases with individual pieces of 10 thou thick plastic card to represent the blocks of stone. It is quicker just to paint the bases grey to represent concrete but putting on separate pieces as I did does not take so very long to do and it really does give a much more effective finish, well worth the extra work. Alternatively, you can cover the bases with stone paper, available from model shops.

The base for the centre pillar is similarly constructed. Its dimensions are 98 mm by 62 mm by 13 mm high. The steps are built up from seven pieces of 60 thou thick plastic card. Each piece is 8 mm wide, and their lengths increase by 4 mm for each step from 7 mm for the top step to 31 mm for the bottom step, and the pieces are cemented one on top of the other. These are then fixed to the base as shown in the pictures. The form this central pillar base takes may depend on the arrangement you use

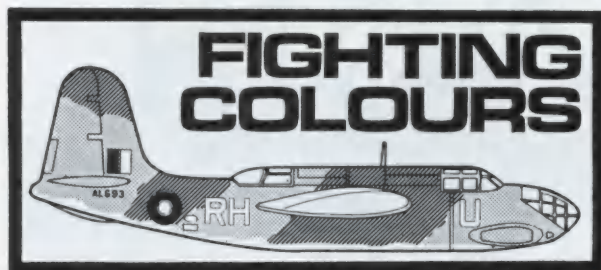
for making the bridge swing. If you will be turning the bridge by hand, or fixing it in the permanently closed position, the method I used is satisfactory and easy to make. I cut a slice 10 mm thick of some scrap plastic tubing of 50 mm outside diameter that I had on hand (I think it was a piece of drainpipe!). A similar sized piece could be made from rolled paper well painted with shellac or you could cut a slice from an empty soap liquid container. I cut a circle of 10 thou plastic card 51 mm in diameter and mounted this on one end of the segment of tube. I then painted the whole matt black. I painted the stone bases with matt grey paint and then, when this was dry, weathered them by brushing on a little black powder poster paint. This tends to collect in the cracks, making them more noticeable. The pillar can now be mounted on its base close to the back, adjusting the exact position to suit yourself.

Then cut a circle of 60 thou plastic card to match the inside diameter of the tube you used for the pillar and fit this beneath the span so that its centre is in the position shown in Fig 1. This fits closely into the top of the pillar and the bridge span can rotate on the pillar. The bridge is completed by the addition of the counterweight atop the shorter end of the span. I cut this from a block of wood, making it 61 mm \times 32 mm \times 14 mm, sanded it well and painted it matt grey for concrete. For a more effective concrete finish the whole counterweight could be cast from one of the cellulose fillers such as Tapwata, using a mould made from wood. The weight is mounted on the bridge span at the end, after trimming off the locating ridges (for the top bracing strut) to allow it to lie flat.

When the finished bridge is placed on your layout the approach piers should be built into the river banks so that they look well embedded and strong enough to support trains running on to the span. Finishing touches could include a small rowing boat tied up alongside the steps, a boy fishing from one of the piers, and so on.



Fig. 2. The bridgeman's cabin, half full-size. Double all dimensions for model. Place on extended supports shown in Fig. 1.



Part 7 : Night Fighters Supreme

BY May, 1941, six squadrons were flying Beaufighter IFs for home night defence, wearing a thick super-matt black finish, as related in 'Fighting Colours', Part 4. Their code letters and serials were very light grey. For the rest of 1941 they were supplemented by Defiants, Havocs, Bostons and Hurricanes. From August, 1941, the Defiant NFII with a Merlin XX was in use, and ultimately served from 1941 to mid-1942 with the following squadrons: No 96 (ZJ, eg, AA540), No 151 (eg, DZ-V:AA436 in use mid-1942), No 256 (eg, JT-?, AA546. Supplemented in 1941 by a few Hurricane IICs as were some other Defiant squadrons—V3995:JT-Y in use summer-autumn 1941), No 264 (eg, PS:AA400). Dull red codes came into general use on home-based night-fighters circa September/October, 1941, and at about the same time larger diameter fuselage roundels were introduced, presumably to improve identity during the winter months.

Another new variant which came into service in 1941 was the Merlin engined Beaufighter Mk IIF. Although R2058, the first one, flew in July, 1940, it was April, 1941, when deliveries to squadrons commenced. Delay arose through various aerodynamic difficulties. Lower power was available for take-off on the Merlin version, which had a pronounced swing. Fear of a shortage of Bristol Hercules engines was, however, sufficient to promote a large order (for 450 Mk IIFs) despite the fact that the need for Merlins was increasing with the large orders placed for the Lancaster bomber. The Mk IIs delivered between April, 1941, and mid-1942, bore the serials R2270-84, R2300-49, R2370-2404, R2430-79, T3009-55, T3070-3107, T3137-83, T3210-3227, T3356-89, T3410-47, V8131-70, V8184-8218. Mk IIs served with many existing Beaufighter squadrons in small numbers, R2270 flying with 604 Sqn in 1942 and R2277 with 25 Sqn, but for the most part they fully equipped squadrons, replacing other types. The principal users, and examples of their aircraft, were:

Sqn	Unit Code	Serial	Notes
96	ZJ	V8138	In use 9.42
125	VA	T3148	In use 5.42
255	YD	R2402 : A	In use 2.42; red codes, large fuselage roundel
307	EW	T3009	In use 3.42
406	HU	R2404	In use 12.41
409	KP	R2331	In use 3.42
410	RA	T3387	In use 8.42
456	RX	T3151	In use 3.42
488	ME	T3385	In use 9.42
600	BQ	R2276	In use 1941

In addition, Mk IIFs formed various portions of the strengths on Nos 51, 54 and 63 fighter OTUs.

As the Mk II was entering service, opinion was divided as to how best to tactically employ the British twin-engined night-fighters. In the case of the Beaufighter II two machines R2274 (used by the FIU and 406 Sqn) and R2306 (used by 29 Sqn) were fitted with four-gun Boulton-Paul turrets immediately aft of the pilot's cockpit, both to cure nose-up tendency when the usual four cannon were fired



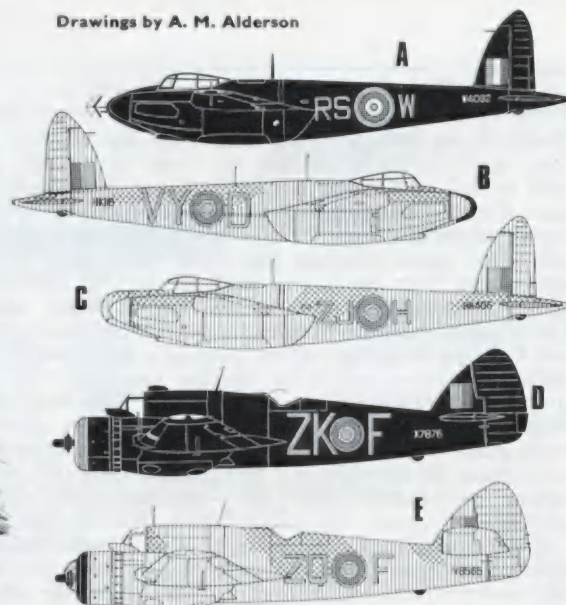
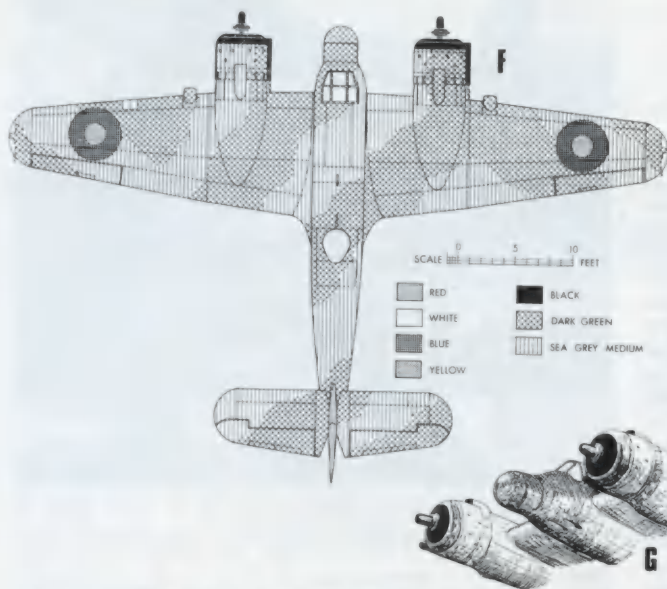
Top to bottom: Beaufighter VIF V8619 with A.I. aerials, grey-green finish, and dihedral tailplane. Beaufighter VIF V8565 ZQ-F of the FIU with thimble nose. Nose installation of centimetric radar on a Beaufighter Mk I (Photos: Imperial War Museum).

and also to permit engagement of the enemy from other than astern. Tests were also made at the Fighter Interception Unit using a Havoc fitted with a battery of six upwards firing guns, and two Mosquito fighters later briefly appeared with turrets, prescribed at this period of trial. Both modified Beaufighters, Mk Vs, were black overall and had modified exhaust stacks to reduce glare.

Spring, 1942, saw the introduction of the Beaufighter VIF to the night-fighter squadrons. Its Bristol Hercules VI engines conferred on it better performance at higher altitude. Most Beaufighters so far used by squadrons carried 'bow and arrow' type A.I. radar aerials, but another change much evident in 1942 was the operational use of centimetric radar employing a dish scanner placed in a thimble-like nose radome. The all-black X7579 with yellow 'P' prototype markings was one of the trial machines fitted with this new A.I. Mk VII radar, superseded in service by A.I. Mk VIII which was fitted in some Beaufighters until the end of the war.

Examples of Beaufighters Mk I/VIF and the squadrons which used them between May, 1941, and October, 1942, were as follows:

Sqn	Unit Code	Serial	Mk	Notes
25	ZK	X7617	IF	In use 1.42; used IF until October, 1942
29	RO	R2192	IF	In use 5.41; used Mk VIF from 8.42
68	WM	R2099	IF	In use 10.41; operated Mk IF from 6.41; VIF received 1.43
125	VA	X7931	VIF	In use 9.42; this Mk replaced IIF in 9.42
141	TW	X7545	IF	In use 9.41, with A.I. Mk IV
141	TW	V8265	IF	In use 8.42, with A.I. Mk VII Mk IF in use from 6.42 to 6.43



Key: (A) Mosquito NFII W4082 as used by 157 Sqn between March and August, 1942. Size of coding on the squadron's aircraft varied, this being slightly smaller than some. After a spell with 85 Sqn, during which it acquired the grey-green finish, it returned to 157 Sqn between December, 1942, and July, 1943. (B) Mosquito NFXII HK118 arrived at Marshalls from Leavesden on February 2, 1943, as a Mk II and after conversion there joined 85 Sqn in April, 1943. It was lost on October 23, 1943. (C) Mosquito NFXIII HK406 as used by 96 Sqn between November, 1943, and July, 1944. It destroyed three V-Is. (D) Beaufighter NFIF X7876 as used by 25 Sqn between March, 1942, and the end of the year. Red codes and serials and the Type C1 roundels illustrate the machine in late summer markings. (E) Beaufighter NFVIF V8565 of the Fighter Interception Unit, as recorded at Wittering on April 29, 1944. A.I. VIII fitted in the nose radome. (F) Plan view of the Beaufighter VIF with nose radome showing typical camouflage pattern, applicable to V8565. (G) Fitting of the 'thimble nose' to accommodate A.I. Mk VIII radar.

Sqn	Unit Code	Serial	Mk	Notes
219	FK	X7557	IF	In use 9.41. Mk VIF came into use 10.42
219	FK	V8451	VIF	
255	YD	X7931 : A	VIF	In use 4.42, the month when VIF replaced Mk IIF
256	JT	X7845 : G	IF	In use 10.42
307	EW	X8106	VIF	In use 5.42, when Mk VIF came into use on sqn
406	HU	X8229	VIF	In use 7.42. Mk VIF came into use 6.42
409	KP	X8153	VIF	In use 6.42, when squadron was equipped with VIF
456	RX	X8251	VIF	In use 6.42, when squadron was equipped with VIF
604	NG	R2136 : N	IF	In use 4.42
604	NG	V8275 : B	IF	In use late 1942.

Mosquito Debut

It is an interesting exercise to consider what fundamental effect upon the war the introduction of the Mosquito in 1940—which would have been quite feasible, had its fantastic potential been realised earlier—would have had. Indeed, in retrospect one may reasonably argue that the war would have been shortened, and pursuance of the fast unarmed bomber concept would have increased bombing effectiveness and cut casualties. This is hardly the place to argue this case, but in May, 1941, when the Luftwaffe ceased its major blitz on Britain this event ironically coincided with the first flight of the all-black Mosquito proto-

type night-fighter, W4052. Accent was then on the reconnaissance version of the Mosquito, the most versatile military aircraft ever produced. With the competent Beau-fighter in widespread service the Mosquito was now developed as a fighter to succeed it. Production lines were established at the SAG factory at Leavesden from where the first Mosquito fighter, an NFII, emerged in January, 1942. So revolutionary was the aircraft on account of its speed and tactical flexibility that it was decided to build Mk II (Dual Control) aircraft as well as normal Mk II fighters. Initially these machines interspersed on the line wore standard black finish. From late 1942 they were finished in dark green and two shades of grey with a Sky Type S tail band and yellow stripes along the wing edges.

On January 26, 1942, the first Mosquito II (DC) was delivered to No 157 Squadron specially formed to work out any snags with the new type at Castle Camps. In April, 1942, Mosquito fighters became operational there and with No 151 Squadron at Wittering. All of their machines had the thick RDM2 black finish which de Havillands abhorred—more so when they found that it reduced the aircraft's speed by about 15 mph. In mid-summer they had it replaced by Night finish, ie the usual matt black. Red codes and serials and the usual roundels were applied changed on the fuselage to Type C1 in July when the fin stripe was also altered to embrace a narrow white band. DD712:YP-R of the third Mosquito fighter squadron had such markings.

Hitler sanctioned the 'Baedeker' raids on April 23, 1942, and a few nights later the Mosquitoes went into action although some weeks passed before they made any claims. These, with the other night-fighters available (which even still included Spitfires used on 'Fighter Nights' yet part of day fighter squadrons in 1942 and Typhoons in 1943), were employed to intercept mixed forces mainly composed of Dornier 217 E4s and Ju 88 A4s and A14s. Following this series of raids the Luftwaffe limited its efforts to small scale attacks on a wide variety of targets.

Summer, 1942, witnessed experiments to change the camouflage of night-fighters. Black always had produced a silhouette effect against a light sky, the Northern Lights and clouds. Various combinations of grey-green-blue grey and brown were experimented with, particularly at RAE.

Continued on next page

Fighting Colours — continued

Finally it was decided to use dark green and medium sea grey, the latter extending over the lower half of the aircraft as well as forming part of the upper surface camouflage. Code letters remained dull red and serials were now Night, although some Beaufighters after repainting retained red serials certainly into 1944. Advantages of the new scheme were that it was ideal for daylight operations over the sea (particularly over the Bay of Biscay where *Instep* patrols were made to interfere with German fighters and Condors observing Allied shipping), and suitable for daylight operations when the weather was poor, also for aircraft engaged on *Rangers* which began in February, 1943. When they were withdrawn from night-fighting duty in about August, 1944, the Beaufighters were still wearing this camouflage. On Mosquitoes it was retained until 1954 when Meteor night-fighters took over—and still wore similar markings for a time.

When Mosquito IIs began their service with No 100 Group of Bomber Command at the end of 1943 they had their undersurfaces and parts of the sides Night, the colour terminating in a wavy line. Vertical tail surfaces remained grey and green. Serials were black—red if they were painted on black areas. Radomes were invariably over-painted in the appropriate camouflage colour at this period.

The grey-green scheme also applied to Boston/Havoc intruders of Nos 418 and 605 Squadrons, the latter's aircraft thus marked including W8263:UP-V and W8399:UP-X in January, 1943. Both were Boston IIIs with clear noses. W8266:UP-H featured a belly gun tray. Bostons were phased out of 605 Sqn in February/March, 1943. Grey and green camouflage was also applied now to the Turbinlite machines. AH510, a Boston used by the 2 TAF Comm Flt 1943 and with Fighter Command Comm Flt later, had this camouflage scheme.

Training Aircraft at OTUs

'Fighting Colours' has naturally concentrated on aircraft in operational formations, but the contribution of the OTUs cannot be overlooked. Their aircraft (often ex-squadron machines) wore standard markings applicable to the period or one earlier.

On July 31, 1944, the equipment at No 51 OTU Cranfield included Beaufighter IFs X7672 and X7675 in standard colours and with dihedral tailplanes. V8254 with them carried a letter 'O' forward of the roundels and looked most unusual in that its entire upper surfaces were a very bright shade of dark green. Serial numbers were black, and the latter aircraft had a 'thimble nose' radome, with A.I. Mk VIII. R2151 had similar radar fitted. Also in use were a number of Beauforts. W6538 wore the overall grey/green scheme for night-fighters with 'H' in black ahead of the roundels, whereas another was grey/green with Sky under surfaces. N1019 also grey/green had black under sides, whereas W6467, which I clambered over at the time, had dark sea grey upper surfaces and white sides and under surfaces. Her serial was in ocean grey, others were black. A curious feature of the upper surfaces was that, when touched, a white powder came off, possibly due to weathering. Alongside was a Mosquito II DZ655 with YX-G in yellow (YX aft on starboard and forward on the port side). Its under surfaces were black. For radar training some specially converted Wellington XVIIIs were available, including MP523 and MP525/G. Their extreme upper surfaces wore the usual sickly grey and green of Coastal Command aircraft, otherwise they were white. Their noses had been



Top: Mosquito NFII DD609 in all-black 1942 finish. It served with 151 Sqn from April 1942, until January 1944.
Above: A Mk XIII in the winter of 1944/45. It has the 'Universal Nose' characteristic of most of the scanner-type radars fitted to Mosquito night-fighters (Imperial War Museum photos).

overpainted. Some Hurricane IICs, their guns removed, were used for practice interceptions of the Wellingtons. In the usual colour schemes but uncoded they included PG436 and PG437.

Refinement

Between 1942 and 1945 the process of refining radar and night-fighters progressed hand-in-hand with tactical requirements of Fighter and Bomber Commands. One special need arose to combat German high-flying Ju 86P bombers which appeared over Britain in August-September, 1942. Although the Spitfire HFVI was available it was really an interim machine preceding the HFVII with its two-speed supercharger Merlin. Nothing was available that could catch the raiders until de Havilland rapidly converted the Mosquito pressure cabin prototype bomber into a fighter by lightening it, extending the wing tips and fitting to it a fighter nose, cut from DD715 which was then being modified into the prototype of the Mosquito fighter with nose radome and scanner radar. The machine, in two-tone grey and dark green, was prepared in the amazing time of one week. Enemy bombers never offered it a chance of combat before the weather broke and precluded high level raids.

Fears remained that the enemy might either resume the raids next year, use the machines for reconnaissance and perhaps for nuisance night raids. Accordingly four more special Mosquito XVs were ordered, and built and delivered in the winter of 1942/43, finished first in PR Blue then in a special deep blue shade known as Deep Sky before delivery. Between March, 1943, and August, 1943, these and the special prototype served with 85 Sqn wearing Night finish. In August they reverted to Deep Sky ready for possible high-altitude attacks, this time on Scotland. These never materialised.

The last major Beaufighter night-fighter variant, the VIF, remained in front-line night defence service until 1944. Both Mk Is and VIs adopted the grey/green finish although there were the usual exceptions to the scheme. All-black Beaufighters were still occasionally seen in 1944 at least. Both marks featured the dihedral tailplane, first fitted to R2057 and principally to Coastal Command aircraft. This modification made the machines more stable, and fighter pilots

Continued on page 358

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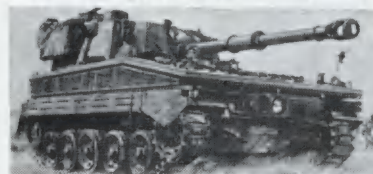
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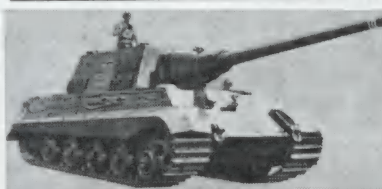
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Fighting Colours — continued

preferred the older type with its increased agility. Beau-fighters in use with FIU at Wittering on April 29, 1944, included ZQ-E:MM857 (red codes, black serial and nose radome) with dihedral tailplane, ZQ-O:R2243 (black serial, dihedral tailplane, nose radome) and ZQ-G:V8329 (red serial, level tailplane).

Filton's final batch of 250 Mk VIFs had nose radomes accommodating A.I. Mk VIII and a late batch from Rootes also featured this. Meanwhile, Mosquito production was at a high rate. Doubts had been harboured about the Mosquito's suitability for service in regions of temperature extremes and high humidity, consequently the Beaufighters were considered more suitable for overseas use.

At the start of 1943 Mosquito IIs began to arrive at Marshalls works at Cambridge, where their machine-gun equipped noses were replaced by black radomes accommodating A.I. Mk VIII, and they were redesignated Mk XII. These first entered service with No 85 Sqn at Hunsdon in February-March, 1943. They were followed by the Mk XVII, similar but with American SCR 720/729 radar known to the RAF as A.I. Mk X.

Mk II production was followed by that of the Mk XIII which entered squadron service in time to join Mk XIIs and XVIIIs, and take a major part in the 'Baby Blitz' of 1944 during which period the Mk II withdrew. Some XIIIIs had the same shape radome as the XII, but a new 'Universal Nose' was designed to accommodate all the scanner type radars early in 1943 and was the usual type fitted to the Mk XIII.

Next came the Mk XIX initially schemed as a long-range version for Coastal Command. In the event it was delivered in quantity to Bomber Command squadrons of 100 Group, and used overseas. Very few problems were encountered with the Mosquito at any time in its career, but initially the exhaust shrouds gave trouble. Final Mosquito fighter development was of a line of aircraft with the Merlin 72/76 and 113/114 two-stage engines, and once more the exhaust system brought many snags. Although these machines came into service in the middle of 1944 it was many months before they could be effectively used. In the last six months of the war they gradually replaced many of the earlier marks in defence and bomber support roles in the version known as NF30.

Full details of the equipment of Mosquito night-fighter squadrons appears in *Mosquito* (Faber & Faber, 84s). Its complexity is such that no comprehensive record could be given justice here. However, the following listing of night-fighter squadrons using Beaufighters and Mosquitoes from late 1942 until the end of hostilities gives some illustration of the versions used:

Sqn	Code	Type	Mk	Serial	Date/Notes
23	YP	Mosquito	II	DD683 : U	Sept '42. All black, no A.I.
23	YP	Mosquito	VI	RS596 : M	Jan '45. Grey-green-black, ASH radar on nose
25	ZK	Mosquito	II	DZ689	July '43. Grey-green
25	ZK	Mosquito	17	HK288 : X	Feb '44. Grey-green
25	ZK	Mosquito	30	NT360 : A	Mar '45. Grey-green
29	RO	Mosquito	12	HK169 : C	May '43. Grey-green
29	RO	Mosquito	13	HK413 : D	Jan '44. Thimble nose
68	WM	Beaufighter	6F	V8619	Oct '43. Thimble nose
68	WM	Mosquito	17	HK348	Dec '44. Grey-green
68	WM	Mosquito	30	NT317 : J	Mar '45. Grey-green
85	VY	Mosquito	12	HK172 : Z	June '43. Grey-green
85	VY	Mosquito	17	HK245 : X	Jan '44. Grey-green
85	VY	Mosquito	30	NT494 : N	Mar '45. Grey-green
96	ZJ	Mosquito	13	HK499 : A	Feb '44. Grey-green
125	VA	Mosquito	17	HK301 : U	Feb '45. Grey-green
141	TW	Beaufighter	1F	V8253 : T	Jan '43. Thimble nose. A.I. Mk VII
141	TW	Mosquito	II	DD717 : M	Mar '44. Black underside
141	TW	Mosquito	30	NT500 : K	April '45. Grey-green
151	DZ	Mosquito	II	W4097	May '42. All black; A.I.



Top: HK428, a Mosquito XIII with 'thimble nose' code letters RO-K. Used by 29 Sqn during 1944. Grey-green finish, red codes. **Above:** Mosquito NFII, DD732, VY-W of No 85 Sqn in grey-green finish with red codes and in this instance red serials. A.I. radar has been deleted by the wartime censorship requirements.

Sqn	Code	Type	Mk	Serial	Date/Notes
151	DZ	Mosquito	12	HK193	Jan '44. Grey-green
151	DZ	Mosquito	19	MM494	May '44. Grey-green
151	DZ	Mosquito	30	MT500 : J	Dec '44. Grey-green
157	RS	Mosquito	II	W4094 : H	May '43. Grey-green
157	RS	Mosquito	19	MM650 : J	June '44. Grey-green-black, full AEAFF stripes
157	RS	Mosquito	30	MV551 : W	Apr '45. Grey-green-black
169	VI	Mosquito	II	W4085 : A	Mar '44. Grey-green-black
169	VI	Mosquito	19	MM645 : U	Feb '45. Grey-green-black
219	FK	Mosquito	17	HK260	Mar '44. Grey-green
219	FK	Mosquito	30	MM790 : G	Dec '44. Grey-green
239	HB	Mosquito	6	PZ226 : B	Sept '44. Grey-green-black
239	HB	Mosquito	30	NT362 : S	Mar '45. Grey-green-black
256	JT	Mosquito	12	HK131	July '43. Grey-green
264	PS	Mosquito	II	DD727 : D	Jan '43. Grey-green
264	PS	Mosquito	13	HK479 : F	June '44. Grey-green; full AEAFF stripes
307	EW	Mosquito	II	DZ741 : E	Nov '43. Grey-green
307	EW	Mosquito	12	HK109 : V	Mar '44. Grey-green
307	EW	Mosquito	30	MT497 : O	Dec '44. Grey-green
406	HU	Beaufighter	6F	ND222 : Y	Nov '43. Grey-green, thimble nose
406	HU	Beaufighter	6F	ND221 : P	June '44. Grey-green. Thimble nose and full AEAFF stripes
406	HU	Mosquito	12	HK164 : N	July '44
406	HU	Mosquito	30	NT283 : G : V	Jan '45. Grey-green
409	KP	Mosquito	13	MM560 : F	Oct '44. Grey-green
410	RA	Mosquito	II	DZ292	Dec '43. Grey-green
410	RA	Mosquito	13	HK466 : P	Feb '44. Grey-green. Universal nose (most usual form)
410	RA	Mosquito	30	MM744 : I	Jan '45. Grey-green
418	TH	Mosquito	6	SZ962 : U	Mar '45. Grey-green-black
456	RX	Mosquito	2	DD739 : K	Aug '43. Grey-green
456	RX	Mosquito	17	HK286 : G : A	Jan '44. Grey-green
456	RX	Mosquito	30	NT241 : G : W	Jan '45. Grey-green
488	ME	Mosquito	12	HK121	Jan '44. Grey-green
488	ME	Mosquito	13	MM466 : R	Aug '44. Grey-green
488	ME	Mosquito	30	NT372 : B	Mar '45. Grey-green
515	3P	Mosquito	6	PZ249 : Z	Mar '45. Grey-green-black
604	NG	Beaufighter	6F	V8557 : R	Oct '43. Grey-green; thimble nose radome
604	NG	Mosquito	12	HK181 : J	Mar '44. Grey-green
604	NG	Mosquito	13	MM503 : B	May '44. Grey-green
605	UP	Mosquito	II	DZ657 : F	Feb '43. Grey-green-black
605	UP	Mosquito	6	SZ993 : A	Apr '45. Grey-green-black

For operations from June 5/6, 1944, which took night-fighters over the south of Britain, and over France, etc, full AEAFF black/white stripes were applied to the machines. These were reduced in about September, 1944, to stripes on the under bellies of the aircraft. This applied to 100 Group aircraft too. From January, 1945, a narrow white ring often was to be seen added to upper surface wing roundels of Mosquitoes.

M. J. F. Bowyer

NEW

KITS AND MODELS

NEW FROM BELLONA

TWO releases in the Bellona Diorama range will be welcomed by wargamers and military modellers who like to build up scenic settings for their models. First of these is a splendid authentic Twin 88 Flak position modelled on the official Luftwaffe layout for AA gun sites with this weapon. It consists of two linked gun bays with a control position between them which includes a removable machine gun-range-finder bay on the roof. It is designed specifically to take the Airfix Flak 88 gun on its ground mount, two kits being necessary of course, for the site. The layout is moulded in brown PVC and can be used just as it comes or else have added detail painted on by the purchaser. This is just the accessory for German airfield layouts or battlefield layouts, since the same site layout was used for any sort of protected target or defensive position.

Second layout is a Redan with revetted gun positions for up to six or so Airfix Civil War field guns or other model cannons of this size. It is suitable for virtually any 19th century war setting (or even World War 1), particularly the US Civil War or the Crimea. Surface detail on the layout is excellent and includes revetting, tree-trunk gun platforms, and gabions. Some loose details are also supplied for cementing where desired on the layout. Each of these diorama sets costs 10s 9d (plus 1s each post) from Bellona, Hawthorn Hill, Bracknell, Berks. C.O.E.

NEW TANK KITS

WE have now had a chance to build samples of the two latest Tamiya tank kit releases which are just reaching Britain. As previously reported these are the King Tiger and Jagd Tiger in the 1:35 scale series and the Chieftain Mk 2 in the 1:25 scale series.

Our sample was the Jagd Tiger (the King Tiger differing only by having a revolving turret and different gun) and we were pleased to see that Tamiya were now offering the option of parts for anyone who wanted to omit the usual motor and moving parts and build the model in purely static form. There are thus alternative sprockets and idlers and torsion bars which can be used instead of metal axles for road wheels. Finish and detailing are impeccable with weld seams and a cast texture overall. The completed model—which we made in its static form—is most impressive, but we wonder how the track would stand up to motorisation as it is moulded in similar form to those supplied in Airfix kits and has to be joined and clipped (or heat welded) together which might prove a weak point. Price of the Jagd

Tiger is 45s in Britain (as is the King Tiger) and our sample was supplied by Tamiya.

The Tamiya Chieftain to 1:25 scale is the most lavish kit we've yet seen. It is best described as like the Tamiya Panther only more so! In fact, the Chieftain is, if anything, better, as the suspension is much easier to reproduce realistically in model form than the interleaved suspension of the Panther. Assembly runs to 27 separate stages, the standard motor and gear train (as provided in the Panther) is powered by four torch batteries (not supplied), and the Horstmann-type bogies each have individual working springs, horizontally opposed in true prototype fashion. All the hatches open and there are separate vision blocks in the cupola. External detail is remarkably complete right down to tools and jack. The track shoes come individually and have to be clipped together by the modeller. Once you've done that you have to add the rubber bushes to each shoe for road running, just as in the full-size vehicle! The track shoes are moulded in metallic coloured plastic which is incredibly realistic. At £5 19s 11d, this is quite an investment but the price is not high for the exceptional quality of the finished model. BMW Models supplied our sample and hold stocks.

C.O.E.

GIANT FERRARI

IF the Chieftain from Tamiya qualifies as one of the finest tank kits, Bandai's Flat 12 Formula 1 Ferrari to 1:12 scale must be one of the most elaborate cars. It is incredibly complex—we haven't finished our sample at the time of writing—and follows almost exactly the construction of the full-size original. The construction sheet runs to 47 stages, and features include a motor and drive concealed inside a dummy of the semi-exposed Ferrari engine and gearbox, complete suspension, fully sprung and with working steering (as well as negative camber just like the real thing), rubber tyres, full internal details, and lift-off cowling. The motor is switched on and off by the throttle lever and the batteries (not supplied) which power the motor are concealed under dummy fuel bags in the front cowling. From the outside it is not apparent that the model is motorised and, of course, you could leave all the mechanical parts out completely if you wished. The kit costs £2 19s 11d from BMW Models of Wimbledon who supplied our sample.

C.O.E.

NEW TRANSFERS

INTERESTING addition to the available range of transfers are two sheets of Belgian Air Force roundels and tail flashes which are being produced, appropriately enough, by the Belgian firm of Inter-Maquette, 137 Chaussee de Wavre, Brussels 5, Belgium. Sheet 1 contains 60 roundels of varying sizes and three long tail flash strips (about 12 inches altogether) in three widths. You simply cut off the length you need for any particular model, which is a good idea we think. The roundels are mostly suitable for 1:72 scale though the smaller ones would do for even smaller scales. Sheet 2 contains 30 larger roundels for 1:48 scale fighters or 1:72 scale bombers, and two slightly wider strips of tail flash. Roundels on each sheet come with and without the blue outer ring so that they are suitable for all periods.

Continued on next page



Tamiya's Jagd Tiger in 1:35 scale, made in static form.

New Kits — continued

They are gloss, and may need matting, but this is no great disadvantage in our experience. Price of each sheet is 4s 2d by post which is good value as specialist transfers go, and, of course, there are very many available models which can be finished in Belgian markings.

New range from USA is Micro Scale Decals which offer an interesting and very high quality selection. In order of release these are (1) US World War 1 and inter-war years (roundels, stars, tail stripes, station names, lettering, and stencilling); (2) US World War 2 (stars with and without red outlines, lettering, 'kills', mission tallies, stencilling, lettering, etc); (3) German World War 1 (crosses in all styles, lettering, stencilling, and numbers); (4) German World War 2 (crosses and swastikas, all styles, stencilling, staffel markings, mission tallies, 'kills', etc); (5) Japanese World War 2; (6) Britain World War 1 (roundels all styles, stencilling, builder's plates, tail stripes); (7) Britain World War 2; (8) French World War 1 (roundels, tail stripes, stencilling, builder's plates); (9) German World War 2 Geschwader badges and Afrika Korps (aircraft) badges—44 pairs altogether; (10) American Volunteer Group (China) markings for Kittyhawks and Tomahawks—six sets with alternatives for 12 aircraft altogether; (11) Spanish Nationalist markings (roundels, tail cross striping, numbers, and 24 pairs of unit badges); (12) Luftwaffe numbers (three styles white, yellow and red).

As can be deduced from the list, this is a remarkably comprehensive series with a very high definition of printing and registration. Certainly the very fine stencilling and tiny unit markings is quite impeccable and we can't really recall seeing lettering this fine in 1:72 scale before. Finish is best described as matt with a very slight sheen and the transfers are very thin indeed. We found that they went on very easily with little or no need for trimming, though it was advisable to 'fix' them in position with varnish within 48 hours of application to prevent lifting; this obviously depends on the surface. Price of each sheet is \$1.50 plus an allowance for postage. This is not unreasonable we feel, for the quality and quantity offered. Micro Decals are available from Martin Krasel Studios, Culver City, Calif, USA. C.O.E.

PLAYCRAFT NARROW GAUGE

THE Playcraft 12v DC electric narrow gauge equipment is very good indeed. It is built to HO scale, ie, 3.5 mm to 1 foot and runs on 9 mm gauge track. It is equally appropriate for running alongside 00 scale equipment where the track gauge represents a scale 2 ft 3 in. The precision with which the equipment has been designed and produced is of a very high standard. The locomotive—a scale model of a French Decauville 0-4-0 tank locomotive—is only just over 2 inches long yet it performs faultlessly at realistic speeds. The moulded plastic body contains a wealth of fine detail, rivets and all. The motor is entirely contained within the boiler leaving the cab completely clear for the driver who is supplied. The wagons and coaches run beautifully on precision 2-rail insulated metal wheels. The toast-rack coaches are a sheer delight with open girder underframes, gaily striped side curtains, canopy and seats. They measure approximately 4½ inches long. The plastic bogie pivots are just a bit suspect—on our sample the pivot was too tight in one instance causing the coach to derail on entering a curve but this was soon put right. Automatic couplings are fitted which connect with Minitrain and Eggerbahn equipment.

The rail is inverted T section of scale appearance mounted in plastic sleepers. These look a little too small and formal for narrow gauge but the track is strong and connects together well. The track is not flexible. Each set consists of one locomotive, 4



A close view of the fine little Decauville locomotive and the tipper wagons from the new Playcraft HO/00 scale narrow gauge range.

curved rails, 2 straight rails (making an oval approximately 19½ inches by 11½ inches), power connector cable and a re-railing ramp. The goods set has 3 tip wagons and the passenger set has two of the toast rack coaches.

Quite the most remarkable feature is the low price. The sets retail at 52s 6d each and the locomotives singly are as cheap as 35s. Additional rolling stock, points and trackwork are available. For the modeller who thought he had no room for a model railway, this is the equipment and now is the time to start. N.S.

AUTHENTICALS LATEST

TWO new sets of decals have been released from Authenticals recently. Sheet No 4 contains 1:72 scale markings for five P-47 Thunderbolts operating in both the ETO and Pacific. Famous aces such as Zemke, Gabreski, Kearby, Schilling and Mahurin are featured.

Sheet No 5 contains US ETO 'kill' markings—50 of each in 21 styles. This is a really comprehensive collection of swastikas and crosses for almost any form of marking detail that the modeller can imagine. Authenticals say that they do not intend to produce any more of these markings on their future productions as this will provide more space for other items.

Both sets of markings are the ultimate in decal art. They are both finely produced, particularly the kill markings which are perfect in detail, and each item sticks satisfactorily on to the model. The individual slide on each section is rather large but a discerning modeller will cut round the edges in any case.

Sheet No 4 also contains in the pack a detailed story of each aircraft featured and a complete colour guide on painting the model. Biographies of the aces are included, together with maps showing the location of the bases from which they flew.

Both sheets cost \$1 each and can be obtained from Authenticals, 2491-21st Avenue, San Francisco, California. 94116, USA. A.W.H.

JAPANESE TANKS IN 1:76

FIRST Japanese tank of World War 2 vintage has now been produced in kit form in the Midori range. It is actually the big Type 4 Medium of 1944-45 which was produced in only very small numbers but is nonetheless an interesting model. Produced as an attempt to match the Sherman, the Type 4 was a development of the better known Type 97 Medium with heavier armour, more powerful engine, and a 75 mm gun. The kit is very accurate, though the outer road wheels seem a shade smaller than they should be. It comes in simple snap-together form with optional friction-drive motor, best discarded in our view. Second new release is an equally good model of the Type 61 Medium tank which is the current standard Japanese Defence Force tank. This is accurate and easy to assemble, though the .5 cal machine gun provided for the turret is crude and best replaced or discarded altogether. Third of the batch is a Sherman which appears to be a very close copy of the existing Airfix model, though it assembles differently. Each of these kits costs 2s 11d, postage extra, from BMW Models Ltd, 329 Haydons Road, London SW19. C.O.E.

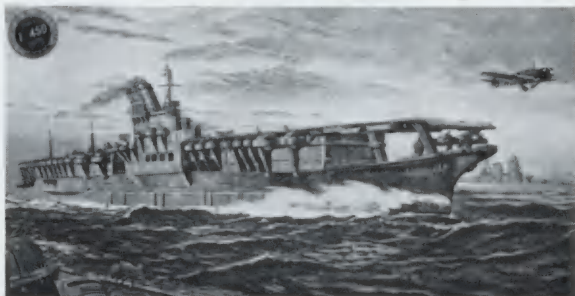


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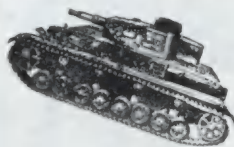
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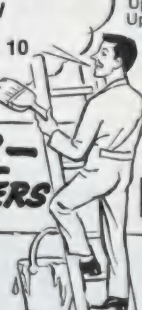
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More rare pictures from readers with captions by **Michael J. F. Bowyer**. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



2



Key: (1) I. A. E. Dixon sends this fine view of 237 (Rhodesian) Sqn Hurricane IICs in the Western Desert, 1943. Nearest machine, HL928, is in standard desert finish with white spinner and has a badge of black and white Matabele shield, crossed Assegai spears, brown with silver tips, and a knobkerrie. Beneath badge is painted 'Bulala' (Kill).



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Key: (2) C. Darke sends this fine picture of a Bristol F2B, probably of 20 Sqn, in India soon after the 1914-18 war. (3) Lovely detail shot of a DH9A of 205 Sqn in France in 1918 will be most useful for anyone tackling the conversion in our March issue. Submitted by J. D. Furze. (4) Bloch MB-152 of Groupe de Chasse II/8, 4e Escadre, in June 1940 was photographed by Paul Camelio, President of Camouflage Air Club, a French enthusiasts' club. (5) Beaufort I L4455-OA-G of 22 Sqn in early 1940. Machine went missing in April. Picture by P. Winston. (6) Jim Whiston sends this view of Avenger 4F of HMS Begum, Eastern Fleet, the same machine as that illustrated in our August, 1967, issue, but without the white bands. We still do not know the squadron, however.

Key: (7) R. B. Haviland sent this view of JT221, a Corsair II and (8) a Firefly I, coded CO, with Barracuda C4H behind. In neither case can we identify the squadron or location. Any offers? (9) Smart Hellcat JV753 at Singapore in 1946 is in 'midnight blue' with white surrounds to insignia and white lettering. Picture by John Williams.

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Letters to the Editor

Shading

REGARDING a letter in the November issue on the subject of painting warships, I really fail to see any value whatsoever in free-lance schemes with the object of presenting the model in contrasting dark and light shades. This surely is a direct contradiction of the true meaning of modelling and if we are to continue the trend our aircraft fraternity will soon be producing sky blue pink Spitfires in Icelandic markings merely because they are gaudier.

One just cannot select three or four greys and sit down to model warships. Wartime apart a grey painted ship was of a uniform grey, but the shade depended upon the station on which the ship was serving. Having exhausted many such schemes within the Royal Navy (not forgetting the many white hulled—buff funnel combinations) one then becomes aware that no two navies used the same shades.

'Tan' decks too need clarification. In the Royal Navy planked decks were of a light cream colour. Once a ship was in commission the lighter the decks appeared after constant scrubbing. 'Snow White' was the ultimate requirement. Not many ships fell far short. Most focsle decks were a dark red, and deck preservative paints (of varied green-grey hues) rapidly gained predominance over planked decks. Anchors in use were the same colour as the hull (kit manufacturers who advise modellers to produce bronze anchors please note!).

Research and reference to records is as essential as following plans and this we must do if we wish to model HMS Hood, and not merely produce a glorified gash-barge.

A. G. Gwinnell, Bicester, Oxon.

Mr Gwinnell raises an interesting point on the question of adding 'depth' to a small scale model by painting in additional shading. In fact, model soldier collectors (in 1:32 scale) have been painting in shading for years and it is such a common practice that a model soldier without the creases, etc, shaded in looks almost incomplete these days. Curious why it is accepted with model soldiers but rarely on other models. Any other views on this?—EDITOR.

Defiant transfers

ANYONE making the Defiant target tug (January issue) in the colour scheme given may like to know that the British roundels from the Airfix Wildcat kit are exactly the right diameter for the Defiant.

G. Walker, Sydney, NSW, Australia.

Mustangs preserved

SOME time ago, in 1966, there appeared pictures and letters in AIRFIX magazine on the subject of the preserved Mustang in Australia photographed when it was in a garage forecourt. This machine is now more completely restored by John Hopton and the picture shows its present appearance. It is a Mustang 21, A68-105, actually a Commonwealth Aircraft Corporation CA-18, constructor's number

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply **MUST** be accompanied by a SAE or stamp.



The three Mustangs mentioned here. Top to bottom: The Mk 21 restored to RAAF colours by John Hopton, Mk 22 ex-A68-199 C/N 1524, used as a target tug and pictured at Bankstown, and last year's King's Cup winning machine.

1430. The spinner is red, and lettering and anti-dazzle panel black. The name 'Fleetwings' was painted on one side of the nose at the Service Station and John has deleted this in the interests of authenticity.

I enclose a further picture of a Mustang 22 still flying in Australia as a target tug, which may also be of interest to readers.

As a continuation to the Mustang story, I enclose also a shot of Masefield's King's Cup Winner taken at Tollerton, August 19, 1967, as this scruffy white machine with orange, white and green roundels has surely found a niche in aeronautical history.

As Alan Hall found when he visited us last year in Newark, we are working on our own Air Museum. Our photo collection is well in being, with some 10,000 negatives now in the collection. Anyone interested in our preservation work is welcomed to contact me.

N. Franklin, Secretary/Curator,
Newark Air Museum,
127 Hawton Road, Newark.

He 177 markings

SOME comments, I think, are necessary on Mr T. Hadler's letter in the April edition of the magazine on the question of the He 177 markings. While agreeing with him on the undoubted excellence of the kit, the question of the codes has him rather adrift.

Firstly, the Geschwader concerned was that of KG 26, which carried the code K9 at least sometime in their career and these were not *always* inscribed in smaller letters forward of the cross insignia, although no fixed rule was in operation during the period concerned.

Secondly, while agreeing with Mr Hadler's colour identification, one must remember that that, too, was none too standard: recce aircraft, for example, carrying an all black coding both fore and aft of the cross.

This particular aircraft marking is both photographed and colour depicted in Volume 13 of the 'Aero' series by R. S. Hirsch and Uwe Feist, and this indicates a red rudder (probably an individual pilot's whim, as with so many Luftwaffe units) agreeing with the kit's colour scheme.

In conclusion, I must say what a pleasure it is to find a correspondent such as Mr Hadler, taking such meticulous interest in Luftwaffe models.

T. E. Langley, Brighton, Sussex.

Matt transfers

WITH reference to J. Harper's letter I find that instead of using glue to hold the transfers on the model, paint some gloss paint, (the same colour as the matt) on the model where the transfer is going to be. When the paint is dry apply the transfer in the usual way. If any gloss should show, paint this over with the matt.

R. Gill, Dublin 14, Irish Republic.

Model 'mud'

I read the letter in AIRFIX magazine, March issue from Mr Ray with interest. I also have a method for representing mud on models. Firstly, I take dry brown powder colour and rub this into the model. Then I mix a little water with the powder colour, so that a thick paste is obtained. Then, this is put in suitable places. I find that this method looks very realistic, especially on colour slide photographs. I hope that this idea will be of some use to your readers.

Stephen Charlton, Middlesbrough.

Zimmerit

I have been experimenting with better methods of representing 'Zimmerit'—the German anti-magnetic mine paste, than the accepted methods. I do not like smearing the model with body putty or Polyfilla and then scribing, as I consider this is messy, difficult, over scale and obscures detail.

Finally, the simplest method proved best. Paint the model slightly thicker than usual. When dry scribe the lines on free-hand with the modelling knife, not too

continued on next page

Letters — continued

geometrically. Harden your heart and study a good photo. One could practise on an old model though this should not be necessary. I think the result is perfect and I shall rework my other models done by the previous methods.

J. Burrows, Southall, Middx.

More Harvards

IN the article 'Where are they now?' (April) reference is made to the Harvard IIB at Little Rissington. Readers may be interested to know of three Harvard IIBs at Boscombe Down. They are FT375, KF183, and KF314. The latter two are used for air-to-air photography and are painted yellow overall.

N. Griffiths, Trowbridge, Wilts.

HP42 markings

I feel congratulations are in order in respect of the Airfix HP42, despite the scale. The intricate detail is superb and this must surely be one of the best kits yet, especially considering the price.

However, every silver lining has a cloud. With the HP42 it is merely a matter of incorrect positioning of transfers.

The base of the large registration letters were at the trailing edge of the lower wing, instead of the leading edge as shown on the instructions. On the top wing these letters began, and ended, nearer the wing tips and there was a wide gap between the two A's, immediately aft of the engines.

The last point is well illustrated in the photograph of the *Helena* on Photopage in the March, 1966 issue of AIRFIX magazine.

One last grumble is that I had great difficulty in making the transfers stick.

In view of this and the number of transfers I have broken in the past I make this plea for a spare set of transfers. In the case of the HP42 this would have enabled me to rectify the mistakes mentioned above as I only discovered them after completing the kit.

Despite these criticisms I am a very satisfied customer.

N. A. Puttick, London SW18.

Churchills at Alamein

WITH reference to the August issue of AIRFIX magazine, Peter Chamberlain's article on the Churchill tank, where he states that it is not known whether three Churchill tanks saw action in the battle of Alamein or not, in Keith Douglas's notebook, *From Alamein to Zem-Zem*, there is an observation that, in the battle of Alamein, three Churchill tanks were actually sent into battle on test, where British anti-tank gunners destroyed one of them accidentally.

W. S. Kendall, Cambridge.

Aircraft hints

MY son and I are comparatively recent readers of your magazine; we frequently see you publishing 'tips' that we have used for years, so we thought we would pass on a few of our own that are so far unused to the best of our knowledge and belief.

(1) Thinning small pots or bottles of paint is greatly simplified by using an ordinary eye-dropper or pen-filler to transfer just the right amount of thinner into the right place!

(2) On World War 2 planes a more realistic effect is obtained by painting the fin stripes of Allied aircraft by hand and later cutting out the numeral transfers supplied with the kit to the bare outline. These invariably match the red and matt blue available in paint form. It saves a great deal of fiddly work with those fin transfers, few of which are the right size! This method is simpler than it seems—so try it, even if you boggle at painting your own roundels.

(3) Someone recently mentioned our favourite method for applying exhaust stains. Can I go a step further and say that in service conditions few aircraft stay in the pristine factory fresh condition of the new kit. We usually paint patches (repairs) on the fabric or outer sheeting (according to period) of our aircraft. World War 2 aircraft look especially effective with a few repairs that have been finished in a brick red primer and not yet camouflaged. The walkways on the wings of fighters invariably become scratched and this, too, can be reproduced with aluminium paint. Wheels become dirty and paintwork generally deteriorates—an effect obtained by mixing grey or black paint with white spirit. Try with a really thin coat first and then thicken it up to get the desired effect.

(4) If making a display of aircraft to simulate airfield conditions, it is worth considering that in the hangars or even outside them, there will be aircraft undergoing an overhaul. It is not difficult to cut away the engine cowlings and fit a dummy engine in the fuselage together with the appropriate cowlings. Wings or perhaps just certain control surfaces can be removed. You may not want to start a model like this from a fresh kit but consider doing it with an old one that you can repaint—you can then make a better example than your first attempt, in its complete form.

G. B. Slater, Bexhill-on-Sea, Sussex.

Some of these tips will already be familiar to more experienced modellers; they are, however, worth publishing here for the benefit of newcomers.—EDITOR.

More on leather

REGARDING the methods used for obtaining a realistic leather finish, the simplest way is to paint the surface the required matt colour and then rub the surface, when it is dry, with a soft, dry cloth; this will give a good leather finish. It may also be used on tanks to give a dull metallic finish and on aircraft surfaces, which didn't always have a perfectly matt finish.

J. Smith, South Shields, Co. Durham.

Resistance men

I HAVE found a simple way of converting the Airfix civilians into resistance fighters of World War 2.

The two running men are cut from their bases, their right arms are cut off and re-fixed with cement so that their right hand is above their head—grenade throwers—cement them back on to their bases, both feet touching the base. A

waving woman and a fat man make an ideal motor crew.

The remaining figures (excluding the small children and sitting adults) are given a variety of guns, either scratch built or cut from Airfix figures. I left the woman with bags as they were to represent ammunition or explosives.

D. Jones, Ashton-under-Lyne, Lancs.

More on Stirlings

ON the subject of Stirlings I enclose a picture (reproduced here) of 'V for Viking', a Mk IV I believe, at Keevil, Wilts, just before the Arnhem raid in September,



1944. This is from 196 Sqn, my father's old unit. The nose motif depicts a Viking head and just below the rear turret can be seen the glider tow rope attaching bar. This particular aircraft was lost at Arnhem.

Arthur M. Chappell, Bedford.

M. J. F. Bowyer writes: *Serial of this machine may have been LJ 949. The ZO was in red and the V in yellow. Aircraft 'S' of the same squadron is just visible in the background.*

FURTHER to Alan W. Hall's Stirling V conversion in the May, 1967 issue, I enclose a picture of one of the sister



machines to that illustrated. This is OO-XAK seen at RAF Tengah in June or July 1948 when it was used to fly ex-Palestine Police officers from UK to Singapore at the time of the emergency in Malaya. Note the name 'Air Transport' on the nose. Lettering was in black on silver.

John R. Maile, Mansfield, Notts.

Dornier conversion

READERS may be interested to hear of another missile-launching variant of the Do 217, the Do 217 E-5. This carried a pair of Hs 293 glider bombs.

The modifications needed to make this version from the Airfix kit are quite easy. Assemble the kit according to the instructions, cutting off the barrel of the machine gun, (part 23) but putting the stub in the place indicated in the instructions. Kit should then be finished as the level bombing variant. Missiles are from the He 177 kit and are positioned with the missile racks 43 mm from the wing tip. A pitot head needs fitting, 11 mm long and located 29 mm from the port wing tip.

Two small triangular windows were fitted to the actual aircraft, just behind the nose. The aircraft I modelled was 6N-GP of 6/KG 100. Colour scheme was two-tone splinter green with pale blue under surfaces and a yellow G after the cross on either side. The number '15' was carried on the port side of the nose in white numerals, at a scale size of 4 mm.

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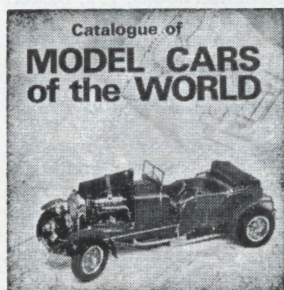
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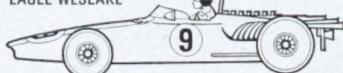
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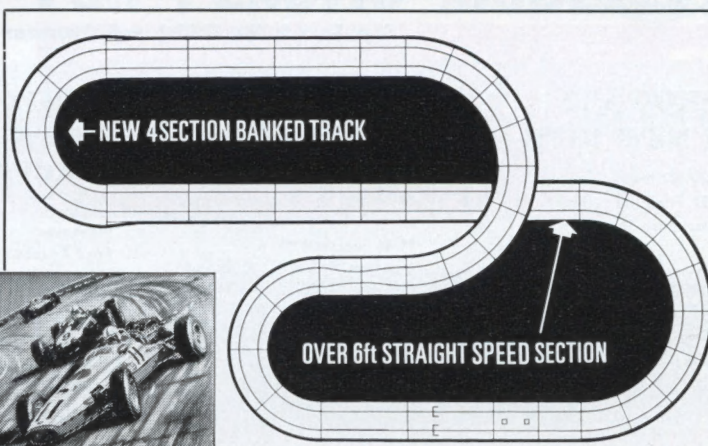
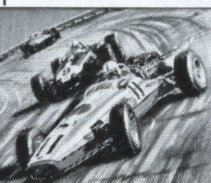
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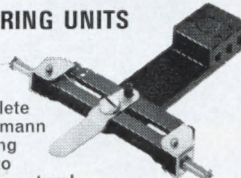
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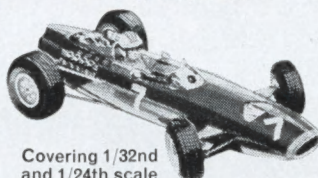


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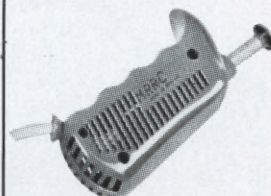


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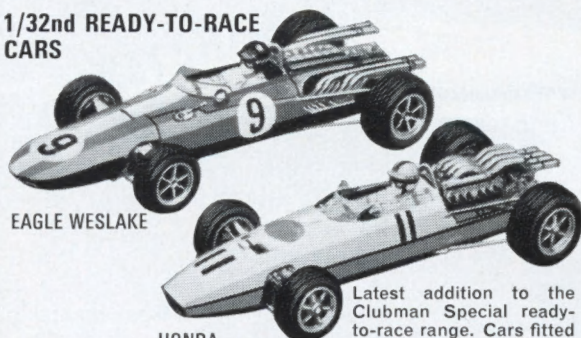
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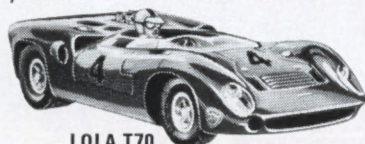
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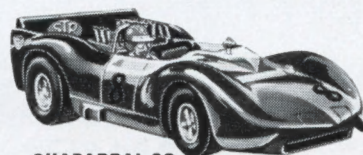
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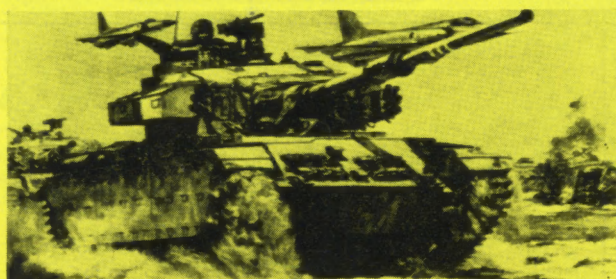
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